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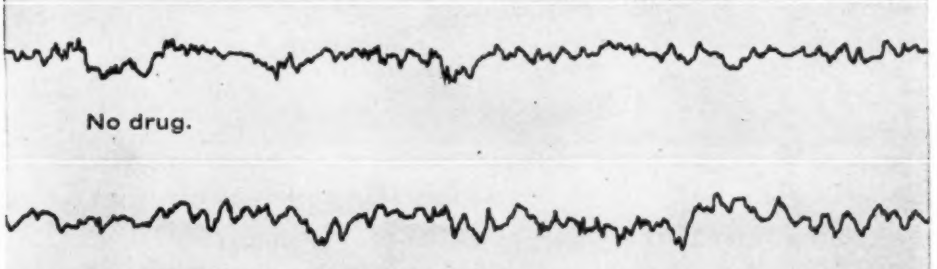

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THE INDUCTION OF PREMATURE LABOR

C. H. MAUZY, M. D.

Winston-Salem, N. C.

There has been a definite trend in the past three decades for certain procedures in obstetrics to be called the "newer obstetrics," or better, the "accelerated" obstetrics. This has been manifested by shortening the second stage of labor with low forceps and episiotomy in the belief that a long second stage of labor may cause irreparable damage to the mother and child. Zealous advocates of this technique would make every delivery an operative one and do away with the normal second stage of labor. These same disciples, having convinced themselves that they now control the second stage to advantage, believe they can do something in like manner about the first stage. In order to accelerate labor or delivery at the patient's or doctor's convenience, premature induction of labor has now become quite fashionable in some places. As pointed out by Ross,[1] artificially induced labor is different from spontaneous labor and the correct term is induction of premature labor because, except for the poorly understood postmature syndrome, all term labors commence spontaneously. The followers of the "newer obstetrics" must not forget that it is the normal physiological process of labor which has always produced the lowest morbidity and mortality rates of both mother and child.

It is admitted that there are real indications for shortening the second stage of labor by the use of low forceps. Likewise, it must be admitted that there are indications for the induction of labor and that the skilled accoucheur can induce labor safely provided he recognizes certain criteria. The statement that induction of labor is a necessary evil of obstetrical practice should be reserved for those who lack this skill.

From the Department of Obstetrics and Gynecology of the Bowman Gray School of Medicine of Wake Forest College and the North Carolina Baptist Hospital, Winston-Salem, North Carolina.

Methods of Induction

The medical literature is replete with articles on the subject of induction of labor. Solomon and Starr[2] cite one of the earliest references: "In the first century after Christ, Soranus, in a text book of midwifery, described artificial rupture of the membranes as a method of inducing labor." Mary Donnelly, of England, in 1738, ruptured the membranes in a patient with contracted pelvis in order to induce premature labor. Many procedures, both operative and nonoperative, have been used. Some have stood the test of time and others, fortunately, have fallen by the wayside.

Castor oil and quinine

The time-honored combination of castor oil and quinine, as a means of inducing labor, does not enjoy the favor it once did. This is particularly true of quinine since deafness and death of the fetus have been attributed to its usage. It has been estimated that approximately 50 per cent of the women at term go into labor after taking castor oil. The procedure is fairly innocuous and, if successful, prevents the untrained from pursuing other methods to disadvantage. We believe if castor

oil fails one should wait at least 4 or 5 days before repeating the dosage, and it is quite possible labor might start spontaneously in this period of grace.

Bougies and bags

The insertion of soft rubber bougies between the uterine wall and fetal membranes to stimulate uterine contractions was first reported by Krause, in 1855. These instruments were responsible for an increase in maternal infection, ruptured uterus, and prolapse of the cord. It is the general consensus that bougies have no place in modern obstetrics.

The first bag was devised by Braun, in 1851, and de Ribes described his in 1888. This was later modified by Barnes and Voorhees. Few obstetricians today make use of a bag as a means of inducing labor and its field of usefulness is limited. Gatewood,[3] Newman,[4] Waters,[5] and Webster[6] have reported bags to be successful in 90 to 96.3 per cent. The operative incidence in Newman[4] and Waters[5] series was nearly 50 per cent and the maternal mortality was 2.1 per cent and 2.4 per cent respectively. Waters[5] found the corrected fetal mortality to be 7.8 per cent and maternal morbidity 37.7 per cent. Brame,[7] between the years of 1925 to 1934, reported that 112 eclamptics were treated at the University of Virginia Hospital with a maternal mortality of 15 per cent. Bags were used 32 times with 6 deaths, an incidence of 19 per cent. At the same institution Thornton[8] had a comparative series of 114 eclamptics in the years 1939 to 1949 with 7 deaths, an incidence of 6.1 per cent. No bags were used in Thornton's series and he has informed me that to his knowledge no bags have been used for any obstetrical procedure in the past 10 years. Ward and Sellers,[9] in a review of maternal mortality in the Southern Baptist Hospital, in New Orleans, found that 10 deaths in their series of 46 were due to induction of labor with bougies or bags, and makes the statement that these methods of induction should be discontinued entirely. We have never employed bougies nor bags for induction of labor and do not advocate their use as such.

Artificial rupture of the membranes

Amniotomy is the most common form of surgical induction of labor practiced in this country. It is a simple procedure which can be done without the aid of anesthesia. We believe that before elective induction of labor by artificial rupture of the membranes is attempted certain criteria must be fulfilled.

1. The vertex must present and be well engaged.
2. The patient should be at or past her estimated date of confinement.
3. The cervix should present anteriorly, be 50 per cent or more effaced, and dilated 2 to 3 cm.

The complications of artificial rupture of the membranes are:

1. Prolapse of the cord, arm, or leg.
2. A latent period between the time of the rupture of the membranes and the onset of labor.

Both of these conditions are rare if the criteria laid down are followed.

The results of a survey made in 1939 by the Committee of Induction of Labor of the Central Association of Obstetricians and Gynecologists[10] showed the incidence of prolapse of the cord or arm was three times as high in the group of patients in whom labor was induced by rupture of the membranes as compared to those patients who had no induction. Keettel[11] found the incidence of prolapse of the cord or arm twice as great in 1000 patients whose labor was induced by rupture of the membranes as in the control group of 1000 cases in which labor was not induced. However, Eastman,[12] Grier,[13] Hanley,[14] Reycraft,[15] Solomon,[2] and Winn,[16] adhering to the above mentioned conditions before rupturing the membranes, had no increased incidence of prolapse of cord or arm.

Another danger of artificial rupture of the membranes is an increased incidence of infection in the mother. This is directly related to that period (latent) from the rupture of the membranes to the onset of definite labor.

The latent period should not be long enough to jeopardize the safety of the patient except in the rare case, but trouble can happen and makes the procedure of rupture of the membranes not entirely a harmless one. McCord[17] said, in 1939, "When one decides to induce labor by rupture of the membranes, all bridges are burned; one's steps cannot be retraced."

High puncture of the membranes as practiced in England for the past decade has not been done by us. In so far as I know it has few advocates in this country. Disadvantages would seem to be hemorrhage from trauma to the placenta during the procedure and also the danger from infection, the latter, of course, increasing if the procedure is repeated.

Pituitary extract

Pituitary extract as a means of stimulating uterine contractions was first introduced by Blair Bell in 1909. Fries and Studney, in 1911, were the first to report successful induction of labor by hypodermic administration of this substance. For years the use of this powerful oxytocic, prior to delivery, was severely criticized by the leading obstetricians of our country. It was customary in many medical schools never to use pituitary extract until after the birth of the child or placenta or both. The articles of Reid[18] and Eastman,[19] in 1946 and 1947, on the use of pituitary extract in uterine inertia and the work of Hellman[20] and others on the intravenous use of oxytocin injection (Pitocin), aroused new interest in this drug as a means of induction, although the original papers were limited to uterine inertia. We believe that Pitocin is the only oxytocic which should be administered in late pregnancy before delivery and prefer the intravenous route. Our solutions are made by mixing 5 minims of commercial Pitocin with 500 ml. of 5 per cent glucose in water. In order to avoid an overdosage of the Pitocin infusion we have found it necessary to begin the intravenous solution without the Pitocin until a slow rate of flow is established which is generally 9 drops per minute. Once the rate of flow is well regulated the Pitocin can then be added to the solution, which is thoroughly shaken. One must remember that it takes a little time for the added Pitocin to flow through the polyethylene tube into the patient's vein and that a minimum of 15 minutes should be allowed for the rate of 9 drops before the flow is increased.

As pointed out by Page,[21] "The threshold of sensitivity (of the Pitocin solution) parallels the degree of spontaneous motility, and may vary a hundred fold from one patient to the next. There is, therefore, *no standard dose, no safe dose, and no dangerous dose of Pitocin when measured by minims, milliliters or units. . . . . the dosage can only be measured in terms of uterine response.*" Therefore, it is essential that this small rate of flow be used to test the sensitivity of the individual and prevent tetanic contractions or a ruptured uterus. The rate of flow is increased slowly and gradually in order to produce uterine contractions, which, of course, should resemble normal labor. All contractions are carefully timed as to duration, interval and type.

Commercial Pitocin contains a small amount of vasopressor substance and for this reason blood pressure should be checked at frequent intervals. Likewise, the fetal heart should always be checked carefully throughout the procedure. If one is able to establish good uterine contractions coming at 5 to 6 minute intervals with a flow of 9 to 20 drops a minute, there is no reason whatsoever to increase the rate of flow because these contractions will become closer as labor progresses just as it does in the normal type.

If one cannot be in constant attendance when the intravenous Pitocin is running, or does not have personnel available to watch it, the best technique is to use two bottles connected to a Y-tube. One bottle contains 5 per cent glucose in water and the other bottle 5 per cent glucose in water with the 5 minims of Pitocin. With this type of set-up the rate of flow can easily be regulated before switching to the Pitocin and in case the attendant leaves the patient the Pitocin solution can be immediately cut off and the other bottle opened. In this manner the patient is not left unattended with the intravenous Pitocin solution

running and at the some time the needle in the vein is kept open.

Contraindications for Pitocin

The contraindications to the use of Pitocin are:

1. Feto-pelvic disproportion
2. Parity of 5 or over
3. Previous uterine scar
4. Lack of trained personnel

When in doubt, don't use it.

The dangers of Pitocin are:

1. Tetanic contractions of the uterus with fetal death.
2. Rupture of the uterus.
3. Elevation of a normal or abnormal blood pressure.

Indications for Induction of Labor

Indications for induction of labor may be divided into 2 groups: 1) medical, which includes diseases incidental or accidental to pregnancy, and 2) nonmedical or elective.

The elective group includes by far the greater number indications for inductions and is apparently gaining in popularity. This group includes all cases of maturity, postmaturity, large babies, and the nonresident patient. Induction should be done for the convenience of the patient and not the obstetrician. The supposed advantages of this method are:

1. It alleviates the fear of the patient that she will have an unattended delivery at home or on the way to the hospital.
2. There is no midnight rush to the hospital and the problem of getting an attendant for her children.
3. Labor is induced when the patient's stomach is empty, thus eliminating the danger of aspiration.
4. The obstetrician is available and supervision of labor might be more adequate during the day.
5. Labor is shortened.

There are those in our specialty who rightly condemn this indication and call it "meddlesome midwifery." They believe, as does Colvin,[22] "If pregnancy and labor are still to be regarded as a physiologic process, the burden of proof for successful outcome following elective induction of labor becomes a moral and legal responsibility of those who so boldly interfere and accept responsibility for the management of unexpected complications after labor has been initiated in a normal process."

If the criteria previously mentioned under artificial rupture of the membranes are observed, then it would seem that the statement by Eastman[23] deserves attention. He said, "It is abuse of the procedure which calls for condemnation and not its judicious employment in carefully selected favorable cases. If the attendant willfully disregards the correct prerequisites or his training has been so inadequate that he does not know them, amniotomy may put the life of both mother and child in deadly peril. Many do not even know the meaning of a favorable cervix. Given a gravida at term with a head below the spines, the cervix soft, 50 per cent or more effaced and 1 to 2 cm. dilated, amniotomy is just about 100 per cent safe and an efficient method of initiating labor."

It is a human weakness for one to become overenthusiastic about any procedure that offers convenience. In his zeal the physician fails to observe the proper criteria because he now believes he can induce labor in all patients supposedly at term on Thursday or Friday and be free for the weekend. A friend of mine, from a distant Southern state, recently informed me that he ruptured the membranes of all term multigravidas at 6:30 A. M. and delivered them in time for him to be in his office at 10:30 A. M. His primigravidas have their membranes ruptured at 7:30 A. M. in order to accomplish the same thing by 3:30 P. M. Such individuals have convinced themselves and have shown to their own satisfaction that the infant mortality and maternal morbidity are no higher than those in the group which had no induction. They fail to tell you, as their associates will, that they get into occasional trouble and they forget those periods of mental anguish when a long latent period sets in. To lose one baby or to inflict any morbidity on a patient is too high a price to pay for convenience.

Contraindications to Elective Induction of Labor

The contraindications to elective induction

of labor are:

1. A long, rigid cervix.
2. Malposition.
3. Obstruction to the birth canal.
4. Disproportion.
5. Lack of engagement.
6. Total placenta praevia.
7. Grand parity.
8. Suspected position of umbilical cord ahead of the presenting part.

It must be remembered that normal labor may at times be accompanied by intrauterine death for which no cause may be found. Should this occur with artificial rupture of the membranes in elective induction, the obstetrician must be prepared to accept the blame. Likewise, it must be remembered that a vasa praevia or an umbilical cord between the head and amniotic sac may be unrecognized when amniotomy is performed and may cause irreparable damage to the infant.

We do not mean to imply that we have never induced labor for convenience. In a five year period, 1951 through 1955, I have personally delivered 1425 babies and have induced labor for convenience in 125, an incidence of 8.7 per cent. There were no fetal nor maternal deaths in this series and the morbidity was less than one per cent. Most of these patients were nonresidents and multigravidas, living 30 to 75 miles distant. Rupture of the membranes alone, or in combination with intravenous Pitocin, was the procedure most commonly used. I have never ruptured the membranes for elective induction if the head was not engaged and the cervix was not favorable.

In January, 1956, because some members of our visiting staff were inducing labor when the proper criteria were not present, and because we are a teaching hospital for medical students and house officers and believe that the most effective teaching is through precept and example, a regulation was put in force which requires a written consultation for the induction of labor. The consultant must examine the patient and confirm that the following conditions are present before elective induction of labor is permitted. These are:

1. Engagement of the presenting part.
2. Effacement of the cervix to less than 1 cm. in thickness.
3. Dilatation of the cervix to more than 3 cm. prior to the onset of labor.

Medical Indications

In the interest of both mother and child there are certain medical conditions in which it would seem best to induce labor. These conditions are placenta praevia, abruptio placentae, and diabetes. If the cervix is favorable the simplest method of induction is artificial rupture of the membranes. The treatment for abruptio placentae to prevent marked dissemination of thromboplastin, resulting in hypofibrinogenemia, is rupture of the membranes. One is amazed that even with a questionable unfavorable cervix how quickly some of these patients proceed into labor and delivery. Page[21] states that intravenous Pitocin should not be used in abruptio placentae because of the danger of amniotic fluid embolism or hypofibrinogenemia which may result. Because of the unexplained intrauterine death occurring in the latter weeks of pregnancy of a diabetic mother, delivery of the infant is indicated between the 36th and 38th week of gestation. In a few cases where the cervix has been unfavorable for amniotomy we have used intravenous Pitocin to prepare the cervix, but we are not convinced that this is the best procedure.

We have not induced labor for cardiac or tuberculous patients. The cardiac load definitely decreases during the latter weeks of gestation and because of our inability to accurately estimate this time we prefer to allow these patients to go into spontaneous labor. The relative safety of cesarean section today does not warrant the premature induction of labor in a contracted pelvis.

It is our opinion that the foremost medical indication for induction of labor is toxemia of pregnancy. Some years ago we became interested in a method of inducing labor in a toxemic patient not at term. In 1952, we published[24] the first paper on the use of intravenous Pitocin in the management of toxemia of pregnancy. It was our purpose then as it

is today to avoid cesarean section as a method of emptying the uterus because we did not wish to place a uterine scar in our young primigravidas who still had their families to raise. We do not believe that cesarean section necessarily makes an obstetrical cripple, but we do believe that this operation carries immediate and remote complications. It may be a deterrent to future child bearing and may tax the judgment of the obstetrician in future deliveries. As the length of our series has increased through the years we are now also convinced that the infant of a toxemic mother has a much better chance of survival if delivered by the vagina and this is particularly true of the premature infant.

In 1955, we published[25] our entire experience to date with Pitocin as a means of induction of labor in toxemia. Labor was induced in 104 out of a total of 703 toxemic patients by this method. Thirty-two of these patients were known to have premature infants prior to induction.

This method has been used only when we felt that the persistence of toxemia was hazardous both to the mother and the child. It is well known that prolongation of intrauterine life in toxemia does not always bring the infant to term as it may die apparently from the same disease suffered by the mother. The risk of prematurity is preferable to the chance of intrauterine death. It must also be recognized that the hazards faced by the mother with toxemia are premature separation of the placenta, eclampsia, and residual hypertension when the toxemia is of long duration. Our procedure usually requires several days and it is not used in patients showing evidence of a rapid progression of the disease such as oliguria or uncontrolled eclampsia. In these patients, the need for immediate interruption of pregnancy is imperative.

We have demonstrated to our own satisfaction that the long, closed, or so-called "unripe," cervix can be converted into a "favorable" cervix by the repeated intravenous administration of Pitocin. In our series of 104 patients there were only two who did not respond to this method of induction. All patients are taken to the labor room and the drug is usually administered during the day time, the patient receiving the intravenous Pitocin by the method previously outlined in this paper. She is given a solution containing 5 minims of Pitocin in 500 ml. of 5 per cent glucose in water. This usually requires a period of 6 to 8 hours. If labor fails to occur the patient is returned to her room for a night's rest. The procedure is repeated on successive days until labor starts, or the cervix becomes favorable for the rupture of the membranes. When the membranes have been ruptured the patient will usually start into labor, or this may be abetted by intravenous Pitocin. All patients must be kept on their usual sedation while receiving this form of treatment. It is this repeated daily administration that spells the difference in successful or unsuccessful induction.

Our policy in all cases of toxemia following the patient's admission to the hospital, is to attempt to classify and stabilize the toxemia. Without observation and treatment for a period of at least 24 to 48 hours we do not believe the condition can be properly evaluated. Pitocin is not administered until this evaluation has been completed and the average hospital stay prior to delivery by the use of Pitocin has been 7½ days, the longest 30 days. All patients receiving intravenous Pitocin have been kept under constant observation. We have had no marked elevation of blood pressure with our patients during induction, but this condition has been reported by others and certainly must be watched for. Should this occur the Pitocin solution should be immediately stopped. We have had no tetanic contractions resulting in fetal death due to anoxia, but the possibility of this occurrence must be kept in mind. There has been one maternal and fetal death in our series. This patient sustained a ruptured uterus from the injudicious use of Pitocin and died as the result of poor surgical judgment and technique. The infant was a hydrocephalic, and was stillborn.

Several cases from my own private practice are illustrative of our method and result.

A 21 year old primigravida, the wife of a medical student, was admitted to the hospital on February 3, 1950, in the 33d week of pregnancy. Her prenatal course had been entirely normal until seen in our office on the day of admission, at which time blood pressure was 160/110. The urine contained albumin, 2 plus, and she had gained 7 pounds in weight in the past three weeks. There was marked edema of the legs and face. Laboratory studies at the time of admission showed NPN of 41 mg. per 100 ml., uric acid 6.4 mg. per 100 ml., and serum protein 7.1 grams. The patient was immediately placed on heavy sedation of phenobarbital supplemented with Seconal, and was given magnesium sulfate intramuscularly. She was fed on a high protein, salt-free diet, and received ammonium chloride for the edema. After one week of therapy the blood pressure was still elevated, the diastolic pressure remaining constantly above 100. The patient had lost 21 pounds in weight.

On the 10th hospital day the blood pressure rose to 150/120 and remained there for a period of 24 hours. The blood uric acid was 8.9 mg. The urine showed a 2 plus reaction for albumin. With these findings interruption of pregnancy was considered necessary and on the 11th hospital day she was given Pitocin. The cervix at this time was 3 cm. long, undilated, and the head was floating. On the second day intravenous Pitocin was administered and the patient went into labor spontaneously and was delivered under local anesthesia 12 hours after the Pitocin was discontinued. The birth was spontaneous and the infant weighed 1447 gm., (3 pounds, 3 ounces), and did well. The patient was discharged on the 13th postpartum day with a blood pressure of 120/80. At the time of discharge the urinary findings were negative. The child is now over 6 years old, and is normal in every respect. The patient has had two additional full term pregnancies with no complications.

The second case—A white female, age 37, was admitted to the hospital on September 11, 1951, with a pregnancy of 31 weeks duration. This patient had been treated approximately three weeks in a nearby town for hypertension and edema of the ankles. There was no improvement. Her past history was negative for any hypertension or cardiac disease. She had some albuminuria one year previously following an infection of a tooth. At the time of admission the blood pressure was 160/110. Catheterized urine was essentially negative except for an occasional hyaline cast. NPN was 49 mg. per 100 ml. and the uric acid 7.3 mg. The uterus was gravid and reached approximately 20 cm. above the symphysis. She was placed on conservative treatment which consisted of sedation, phenobarbital, high protein, low salt diet, absolute bedrest, daily urine analyses, and record of intake and output, and daily weight. Repeated Fishberg tests showed the highest concentration to be 1.018. This patient's systolic blood pressure averaged around 170, and the diastolic pressure varied from 90 to 100 for the first 14 days of treatment. Toward the latter part of the third week and throughout the fourth week the systolic pressure ranged from 160 to 200, and the diastolic from 90 to 110. The uterus had not increased to the size of a normal 34 weeks' pregnancy. It was felt that with a rising blood pressure we were facing possible superimposed toxemia and a poor prognosis for the infant.

On October 7, 1951, a sterile pelvic examination was performed by me which revealed that the cervix was 2 to 3 cm. in length, and would not admit the tip of the finger. The fetal head was at a minus 3 station. On this day she was started on intravenous Pitocin, which was repeated for the next 5 consecutive days. On the fourth day a sterile pelvic examination showed the head to be at a plus 2 station. The cervix was 1 cm. in length. The cervical os easily admitted one finger and could be stretched to 2 fingers. The membranes were ruptured. Pitocin was repeated and the patient was delivered on the following day spontaneously under local Novocaine anesthesia with the aid of episiotomy of a normal female infant weighing 2 pounds 8 ounces. The child did well and is now almost 5 years old, apparently normal in every respect. When last seen approximately one year ago, the patient still had an elevation of blood pressure.

Conclusion

The best methods for induction of labor are either artificial rupture of the membranes or intravenous use of Pitocin or both. The dangers of each must be recognized and their limitations carefully observed. The induction of labor is justified in selected cases of toxemia, abruptio placentae, placenta praevia, and diabetes. The obstetrician must share the full responsibility of any hazard to the mother or child in the elective induction of labor.

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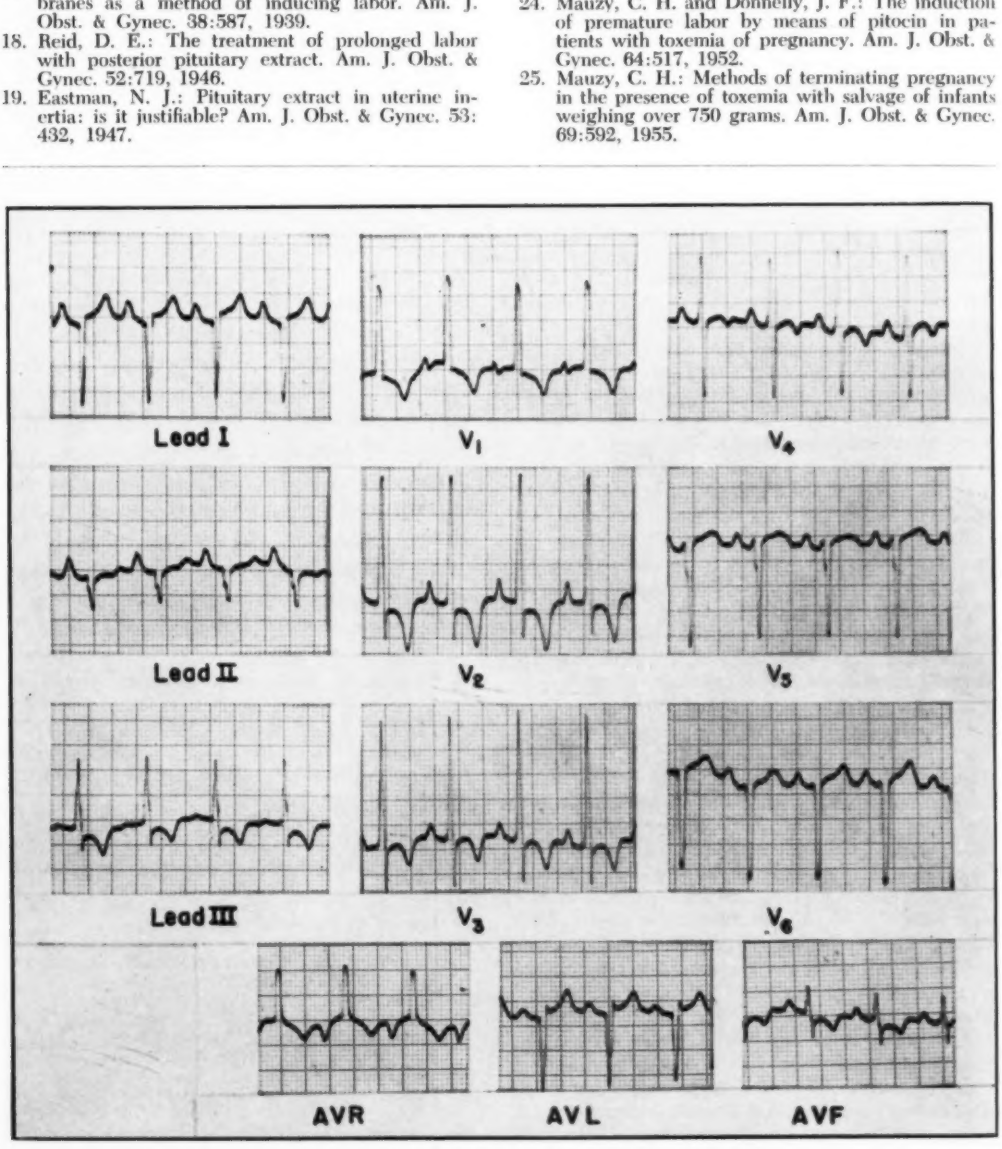

Electrocardiogram of the Month—Dr. Dale Groom

ELECTROCARDIOGRAM OF THE MONTH* –

PULMONARY STENOSIS

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Case Record—A 15 year old girl was referred to the Medical College Heart Clinic for evaluation of a heart murmur discovered as an incidental finding on physical examination. She acknowledged having had a decreased exercise tolerance which had progressed during the last three years to dyspnea and exhaustion on even moderate exertion. Her mother stated that the patient had been born prematurely, maintained in an incubator for several weeks after birth, and that her development had been somewhat slower than that of the eight other children in the family. The mother had noted a dusky hue to the child's face following physical exercise but did not recall any real cyanosis.

Physical examination revealed evidence of considerable cardiac enlargement, and a loud systolic murmur and palpable thrill of maximum intensity in the second and third intercostal spaces along the left sternal border. Almost no pulmonic second heart sound was audible at this area. A distinct thrust could be felt over the entire precordium on systole. The general physical development was judged to be that of a child about three or four years younger.

Laboratory studies revealed a mild polycythemia, an arm to tongue circulation time of 20 seconds, and a venous pressure of 220 mm. of water. In the chest x-ray the right ventricle was seen to be greatly enlarged, obscuring the pulmonary artery. There was no increase in vascularity of the lung fields. The patient's electrocardiogram is shown on opposite page.

Following digitalization the patient was subjected to cardiac catheterization. A systolic pressure of 126 mm. of mercury was recorded in the right ventricle with an average pressure of only 10 mm. in the main pulmonary artery. When the tip of the catheter was pulled back from the pulmonary artery through the valve into the right ventricle the rise in pressure was abrupt, indicating a localized or "valvular" type of obstruction. The blood oxygen saturations in the various chambers of the heart were not remarkable, and that in the brachial artery was 95%.

With the diagnosis of congenital pulmonary stenosis the child was operated on the following month for surgical correction of the valvular defect. Under hypothermia, the body temperature being reduced to 26° C, the heart was exposed through a trans-sternal incision. It was observed to have a markedly hypertrophied right ventricle, with some enlargement of the right atrium and a post-stenotic dilatation of the pulmonary artery. Size of the pulmonary valve was estimated by palpation through an incision in the pulmonary artery to be about 3 mm. diameter; following valvulotomy it was possible to insert the finger into the right ventricle through the pulmonary valve. After several episodes of ventricular fibrillation requiring cardiac massage, injections of novocain into the ventricle, and electrical defibrillation a normal sinus rhythm was restored and the incision closed. The patient made a satisfactory recovery and was dismissed from the hospital on May 14, 1956 with an excellent prognosis.

Electrocardiogram—There is a moderate sinus tachycardia at the rate of 110. P waves are seen to be unusually prominent measuring more than 3 mm. in height in leads 1 and 2. The QRS axis is directed far to the right, pointing more toward the right arm (upright deflection in aVr) than the left leg. High R waves with inversion of T waves are present in all right precordial leads, with small R and deep S waves in V-5 and V-6. ST segment displacements of at least 2 mm. occur in several leads. The PR interval is at the upper limit of normal, measuring 0.20 sec., the QRS is of 0.08 sec. duration, and the intrinsicoid deflection of the R wave in V-1 (the time from onset of the QRS to peak of the R wave) measures about 0.04 sec.

Discussion—Seldom does one see such advanced right ventricular hypertrophy in pure form as illustrated in this electrocardiogram. Only the right side of the heart has undergone hypertrophy as a result of the long-standing obstruction at the pulmonic valve. There would be no reason to expect any enlargement of the left ventricle with this lesion—in fact, its work load would probably be decreased commensurate with the decreased cardiac output which probably accounts for the retarded physical development in these cases. Prolonged elevation of pressure in the right ven-

*One of a series of clinical-electrocardiographic correlations. Purpose of this series is the presentation, not of necessarily rare or unusual ECGs, but of those which illustrate basic electrocardiographic principles or which contribute prominently to the clinical diagnosis.

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tricle (126 mm. of mercury as against a normal pressure of about 20-25 mm.) has given rise to considerable hypertrophy so that its wall thickness may equal or even exceed that of the left ventricle. To some extent this increased work load is passed back to the right atrium with consequent enlargement of that chamber also. It is not known why a poststenotic dilatation often occurs in the pulmonary artery in the presence of the abnormally low pressure in this vessel distal to the obstruction.

Criteria for the electrocardiographic diagnosis of right ventricular hypertrophy vary. Perhaps the most reliable evidence is the delay in intrinsicoid deflection of the R wave in V-1 since this is a measure of the time required for depolarization to pass through the right ventricular wall. Normal values for this are on the order of 0.02 sec. Another criterion is height of the R waves in the right ventricular leads V-1, 2 and 3: while normally the R waves increase in amplitude and the S waves decrease as the electrode is moved from right to left across the precordium this sequence is completely reversed in this case so that lead V-6 resembles a normal V-1, and V-1 has the configuration expected in position V-6. Generally less reliable is the axis deviation observed in the standard leads since a vertically disposed heart may show right axis deviation without having actual right ventricular hypertrophy. Various rotations of the heart, particularly along its long axis, may alter these electrocardiographic findings somewhat. However, it is frequently possible to make a diagnosis of right ventricular hypertrophy by these criteria before the typical changes become apparent in the roentgenogram.

The tall pointed P waves which are commonly seen in this condition ("P pulmonale") develop with enlargement of the right atrium. Were it not for the upright P waves in lead 1 this tracing might be interpreted as indicative of dextrocardia because the QRS axis is almost identical to the axis in situs inversus.

In spite of the fact that electrical changes do not necessarily reflect mechanical changes in the heart, there is some justification for the concept of "ventricular strain" illustrated here by the displacements of the ST segments. Whether there is actual ischemia of myocardial tissue due to the inordinately high pressure in the right ventricle or not, the tracing shows a current of injury recorded predominantly over the right ventricle, commonly interpreted as evidence of "right ventricular strain". Also in these leads the T waves are sharply inverted, indicating that the direction of repolarization has become reversed in the right ventricular musculature, presumably because of increased thickness of the wall or increased pressure within the chamber or both.

It is probable that this patient's electrocardiogram will show considerable reversion toward normal within a matter of months following surgery.

Medical history is often accused of dealing with "old theories." This reproach overlooks the fact that modern medicine, too, depends upon certain basic philosophical assumptions and scientific theories, even though it may not formulate them as clearly as its predecessors. These will be the "old theories" of tomorrow. Modern men, no less than men of former times, see only what they are prepared to see, and a new outlook is always needed in order to see something fundamentally new. Therefore it is a most valuable feature of medical history that it makes us conscious of the important role of theories, for better or worse, at all times. The knowledge of old theories offers an additional advantage to the doctor in that many of his patients still cling to a variety of medical beliefs which can be traced to the Stone Age, the ancient Greeks, Paracelsus, or the Scotsman John Brown.

Ackerknecht—*A Short History of Medicine*

DIOSPYROBEZOAR - A CASE REPORT

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Summary

Bezoars are concretions of various foreign or intrinsic substances found in the stomach and the intestines of both men and animals. There are three varieties. 1. Trichobezoars (hair-balls) also known as pi'obezoars. 2. Phytobezoars (plant balls), and 3. Concretions.

At the present time there are believed to be more than 400 cases of bezoars reported in the literature. About half of these are trichobezoars and 40% are phytobezoars. The phytobezoar caused by the persimmon ball is known as diospyrobezoar, and these formations compose approximately 80% of this group.

The symptoms of a phytobezoar are those related to the degree of gastric irritation or ulceration. The ball is formed immediately and the symptoms will soon follow. Ulceration of the wall may lead to gastric hemorrhage, perforation or obstruction. The balls have been known to pass through the stomach and obstruct the bowel lower down. The diagnosis is usually by roentgenogram and the treatment is the surgical removal of the bezoar.

This case concerns a sixty year old hunter, who being hot and tired ate a number of persimmons some of which were obviously unripe. That evening he developed abdominal symptoms associated with nausea and vomiting. After various studies, roentgenograms revealed the presence of the bezoar and surgical removal was successful.

Trichobezoar

Hair-balls develop over a period of years and about 80% of them occur below the age of thirty and about 90% in females. They form from the habitual ingestion of hair but the precise etiology and pathogenesis is not clearly understood. It is generally believed that trichophagia, like other habitual body manipulations such as nail-biting, toe-biting and tongue sucking represents an expression of personality maladjustment. Only 9% of DeBakey's and Ochsner's series[3] showed overt psychic or mental disturbances. Often mixed with the hair will be various threads, strings, beads and vegetable fibres. They are usually greenish-brown or black in color and are of various sizes and shapes. A cast of the organ is common. They have an extremely nauseating odor due to the putrefaction and decomposition of the various foods and residues in the ball. Since they are developed by the constant ingestion of the hair, they are consequently laminated.

Concretions

These occur in less than five percent of bezoars and result from the imbibition of furniture polish, which consists of a strong alcoholic solution of shellac. Drinking water after this precipitates the resin and an accumulated mass occurs. They are found most often in painters, furniture workers, etc. Other concretions result from the ingestion of various medicaments such as salol for cystitis, magnesium and sodium carbonate for peptic ulcer, and paraffin derived from some laxative preparations.

Phytobezoar

The origin of this word is from the Greek "phyton" meaning plant. They consist of a variety of fibers, skins, seed, leaves, roots and stems moulded together. About 80% of the phytobezoars are formed from persimmons. The size and shape varies tremendously but the average is five to ten cm. by three to six cm. They are usually of a dark brown or black color, are smooth or pitted and are compact. Since they are formed on ingestion, they are not laminated and do not greatly increase in size, however they are commonly multiple.

"Diospyron" is the Greek word for "wild persimmons". In 1913, Izumi[4] proposed a mechanism for the formation of diospyro-

bezoars. He found that shibuol, a phlobatannin, was found in greatest amounts in the unripened persimmons and was in a soluble state. On contact with a weak mineral acid, as hydrochloric acid found in gastric juices, it became transformed into a sticky coagulum cementing into a ball, pieces of skin and other particles that may be present in the stomach. The ripe persimmon still contains some shibuol but it is found in largest quantities in the skin and calyx. The soluble shibuol accounts for the astringent taste of the persimmons, thus the ingestion of some slightly unripened persimmons, especially on an empty stomach with no food to interfere with the contact of gastric juices, predisposes to the formation of a bezoar. Other materials that have been said to form bezoars are cocoanut fibers, heather root, celery, pumpkin, skins and stems of grapes, prunes, raisins, leek, etc. Izumi et al[4] worked with 22 different fruits and only with persimmons could they get a bezoar.

Various studies by Izumi's group, DeBakey and Ochsner and Chont have been done in order to establish the relationship of gastric acidity to the formation of bezoars. It appears that the unripe persimmon will form bezoars in any strength dilute hydrochloric acid but not in water or an alkaline solution. DeBakey and Ochsner felt that hyper-secretion of hydrochloric acid was secondary to the mucosal irritation of the bezoar. The stronger the acid the more rapid and certain the formation of a bezoar and this accounts for their prevalence in farmers, hunters and outdoor workers who eat persimmons on an empty stomach.

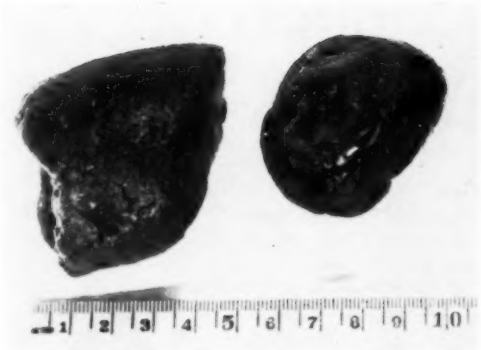
In America the persimmon belt includes Kansas, Oklahoma, Texas, Illinois, Indiana, Ohio and Pennsylvania. In 1938 DeBakey and Ochsner reported 311 cases and Trondreau and Kirklin in 1950 reported 100 additional cases of bezoars. Over half of these cases were trichobezoars and about 40% were phytobezoars. As stated above about 80% of the phytobezoars are diospyrobezoars or those caused by unripe persimmons.

Most diospyrobezoars are found in male farmers, especially in the latter decades of life. There are reported cases occurring at two years of age and seventy-eight years of age. About 70% occur after thirty years of age and 77% occur in men. Chont[2] states that children and negroes are almost immune to diospyrobezoar.

The symptoms of diospyrobezoar will depend on the degree of gastric irritation. The difficulty begins within 24 hours of ingestion of the persimmons and usually includes abdominal pains, tenderness, nausea, vomiting, etc. Later a mass may develop and if the time is prolonged, weight loss will develop. In one recorded series 50% of the patients had had symptoms for six months or over before seeking medical care. The gastritis may develop into a frank ulcer which may bleed, perforate or obstruct. In O'Leary's series[7] 71% of the cases had a gastric ulcer. Obstruction has occurred in the jejunum, ileum and rectum. In the discussion of O'Leary's paper, Dr. Pat Fite reported a case of a bezoar in a traction esophageal diverticulum in the middle third of the esophagus which was diagnosed as carcinoma. A gastrostomy was done and the patient progressively improved. Finally the bezoar passed from the diverticulum into the stomach, and then obstructed the jejunum.

The diagnosis is obviously suspected from the patient's history, however it is most often diagnosed by x-ray and fluoroscopic examination. The free mobility of the intra-gastric mass is diagnostic.

The treatment, obviously, is removal of the bezoar by enterotomy. Outten records the first successful surgical removal of a phytobezoar in 1894. In O'Leary's series[7] two patients had perforations of their gastric ulcer after the bezoar had been removed. Allen[1] reported a case of a man aged 71, with a perforating gastric ulcer which was closed as an emergency measure. His recovery was extremely slow and six months later a diospyrobezoar was discovered. It was then brought out that he had eaten persimmons fourteen months before this operation. One caution to the operating surgeon should be that diospyrobezoars are often multiple.



Two Persimmon Balls Are Shown And A Seed Can Be Seen In The Smaller One.

Case Report

A. D. S., a white male sixty years of age was first seen by one of us (B. N. M.) in late December of 1955 complaining of abdominal pain and nausea of two week's duration. He indicated a rather sudden onset of his illness and stated that while hunting in the afternoon he "ate a bait of persimmons". Within an hour or two he was very uncomfortable all through the abdomen. There had been the prominent element of nausea with the heavy uneasy feeling in the lower abdomen. He had altered his diet to partake of various soft foods, mostly milk; and this also seemed to cause discomfort.

His family and past medical histories were irrelevant and his past general health had been described as good. He had never had any particular difficulty with indigestion. In August 1952, he had had a bilateral herniorrhaphy and a sub-total thyroidectomy.

The patient weighed 146½ pounds and was 69¼ inches tall. His blood pressure was 144/90. He appeared quite depleted and miserable but was not in any great pain. The skin and mucous membranes were of good color. There was no generalized lymph adenopathy and the oral hygiene was good.

There was a thyroidectomy scar and no cervical adenopathy. Chest expansion was adequate. The lungs were clear. The heart sounds were rhythmical without murmurs and with no enlargement. There were bilateral inguinal herniorrhaphy scars with good support. There was generalized abdominal tenderness, more marked in the lower abdomen. No abdominal masses or organs were palpable and rectal examination was negative.

After he did not respond to simple medicaments, roentgenograms by Dr. T. A. Pitts revealed a defect in the stomach which was of a questionable character. Re-examinations revealed freely movable foreign bodies in the stomach and the diagnosis of diospyrobezoar was made.

The patient was admitted to the Providence Hospital on January 10th, 1956, operated upon the next day and dismissed on January 18th. Through a transverse epigastric incision the stomach was exposed and opened. Two large phytobezoars were removed. There was a prepyloric lesser curvature ulcer about 1.5 cm. in diameter and markedly indurated. It was felt that this ulcer was due to the bezoar and it was not disturbed. The stomach wall was closed and the patient made a normal postoperative recovery.

Pathological report by Dr. H. H. Plowden stated that he had received two deep black-colored, smooth, irregularly shaped foreign bodies removed from the stomach. The larger of these masses measured approximately 5 x 4.5 cm. while the smaller measured 3.5 x 3.5 cm. The masses were firm in consistency and deep black in color and on the outer surfaces could be distinguished at least one seed from a persimmon and probably small fragments of persimmon skin.

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PNEUMONIA IN VARICELLA IN THE ADULT

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It is a well established clinical observation that the infectious diseases of childhood may be unusually severe when they occur in the adult age group. In 1942, Waring, et. al.,[1] first called attention to the possible severe complications of the varicella viremia in adults and presented two cases of which one showed bronchopneumonia and encephalitis, and the other showed bronchopneumonia with pleurisy, congestive heart failure, toxic glomerulonephritis with azotemia. In the 14 year interval an additional 13 cases of varicella with complications by viremia have been reported.[1-12] Post mortem studies have demonstrated diffuse visceral involvement by varicella lesions which have explained the clinical complications that have been reported.[1, 5, 7, 13, 14, 15] Two additional cases of bronchopneumonia and visceral involvement by varicella are presented with discussion.

Case Report

Case 1.—Present Illness: A 35 year old white stenographer was admitted January 17, 1954 in moderate respiratory distress. The patient gave a history of exposure to varicella (chickenpox) one month prior to admission. She experienced prodromal symptoms of malaise, anorexia, and fever 8 days prior to hospital entry. These were followed within 24 hours by successive crops of typical vesicles over the entire body, these became confluent over the face and shoulders. She was treated initially at home with aspirin for fever, phenobarbital for sedation, and tetracycline 250 mg. every 4 hours. She became progressively more ill, developed high fever, severe cough and chest pain. Eight days after the vesicular eruption she was dyspneic, with definite cyanosis of lips and nail beds. She also developed dysphagia, moderate pain over both lumbar areas and chest pain accentuated by deep breathing or coughing.

Past history: She had been known to be a labile hypertensive for 5 years. Blood pressure readings varied between 140 to 170 systolic and 90 to 100 diastolic. Her review of systems was non-contributory. A chest roentgenogram made on March 15, 1952 revealed normal lung fields and a normal heart size.

Physical examination: Temperature 101.4°, pulse 92, respiration 30, blood pressure 170/80.

The patient was poorly nourished and developed, apparently middle-aged, white female, in moderate respiratory distress, with shallow, rapid respirations. There was some cyanosis of the lips and nail-beds. There was a generalized vesicular, crusting, erythematous skin eruption in various stages of breakdown over the entire body, densely confluent over the face. There were no lesions noted on the palms or soles. There was a generalized shotty lymphadenopathy. There were scattered vesicles over the palate and pharynx. The larynx showed only slight erythema. There were a few vesicles noted in the nasal mucosa. Expansion of the chest was limited bilaterally. There were diffuse, moist rales throughout both lung fields. The percussion note was resonant throughout. The cardiac rhythm was regular. There were no murmurs heard. No demonstrable cardiac enlargement was detected. The remainder of the physical examination was within normal limits.

Laboratory data: RBC 3.92 million, Hgb. 13.5 gm., WBC 4,100, 74% polys, 23% lymphs, 3% monos. Urinalysis: Specific gravity 1.016, reaction acid. A trace of albumin. Microscopic: Occasional WBC and RBC. Sputum: Negative for acid fast bacilli.

Hospital course: The patient was given oxygen by nasal catheter at 7 liters per minute, steam inhalations, aspirin for pain. Tetracycline was continued in increased dosage of 500 mg. every four hours, and this dose was gradually reduced through seven days of her hospital stay. Her total dosage in the hospital was 14.5 gm. She remained cyanotic at rest for 48 hours, and then was cyanotic only on prolonged coughing for the following 24 hours. She continued to complain of severe substernal pain, accentuated by coughing or movement. An electrocardiogram taken on the second hospital day showed a right axis deviation, with right bundle branch block, and sinus tachycardia. This was repeated on the fourth hospital day and was essentially unchanged. She became afebrile for the first time on the fifth hospital day, and following this gradually improved, with lessening of cough and chest pain. Her sputum became less tenacious and colorless. Physical examination of her chest revealed only fine moist rales throughout both lung fields, and there were no physical findings of consolidation at any time.

She was discharged as improved seven days after hospital entry. Roentgenograms of the chest on February 10, 19, and 26 and on March 19, and April 23 showed gradual clearing of the widespread miliary and sub-miliary deposits. The last film obtained re-

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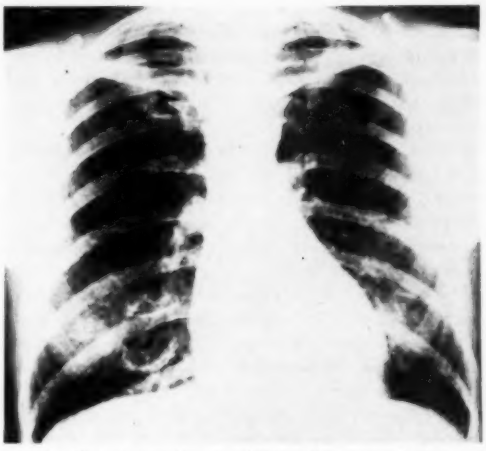
CASE 1

(1) *On admission*



(2) *Almost complete resolution three months later*

vealed miliary deposits with more generalized fibrosis. Follow-up electrocardiograms were obtained on the same date as her x-ray studies and these revealed a persistent right bundle branch block, with no other essential change. The skin lesions healed slowly but at least half of these left punctate depigmented scars, easily visible one year after recovery.

Case Report

Case 2.—Present Illness: A thirty-one year old colored female (gravida IV, para III, abortions 0) whose last menstrual period was May 31, 1955 was admitted Dec. 14, 1955, with chief complaint, "Can't breathe." Fourteen days after exposure to her son's chickenpox the patient noticed a rash on her hands. This rapidly became vesicular in type and spread in successive crops over her body, particularly the face. A day following the rash the patient began having moderate respiratory distress with a cough productive of thick, white, tenacious sputum. Also she became anorexic, developed nausea, and vomiting. She experienced one definite episode of fever and chills lasting approximately 5 minutes. She came to the emergency room early the following morning in obvious respiratory distress and appeared quite toxic.

Past History: Mumps, measles, scarlet fever, pertussis as a child. Treated for syphilis in 1947 with penicillin. No follow-up studies done.

Physical examination: Temperature 100°, pulse 130, respiration 40, blood pressure 110/60.

A pregnant, obese colored female in moderate respiratory distress with rapid, shallow breathing.

Vesiculopapular rash in various stages of breakdown over upper one-half of body. Generalized shotty lymphadenopathy. There were erythematous papules noted on oral mucous membranes and soft palate. Limited expansion of the chest bilaterally; shallow, rapid respirations. Diffuse fine moist rales throughout both lungs, with greatest concentration left lower lobe posteriorly. No dullness to percussion. Sinus tachycardia, no murmur or cardiomegaly detected. Uterus six inches below xiphoid. Fetal heart tones 130 per minute in the left lower quadrant. The remainder of the physical examination was within normal limits.

Admitting Lab. Work: Urinalysis—negative. RBC 3.9

CASE 2

(1) *On admission*

(2) *At height of involvement*

(3) *Near resolution three weeks later*

million, hgb. 12.0 gm, WBC 9,850, with differential of 90 polys. and 10 lymphs. Sickle cell preparation negative for 72 hours.

Blood chemistry: BUN 14, fasting blood sugar 118, blood chloride 470 mg., serum sodium 316 mg., serum potassium 15.2 mg., per 100 ml. carbon dioxide combining power 36 volumes %, Wasserman and Kline negative. Sputum: Gram stain—occasional gram negative cocci.

ECG—Sinus tachycardia, non-specific ST elevation I, AVL, and V6.

Chest: Extensive bronchopneumonia.

Hospital course: The patient was given symptomatic care—oxygen by nasal catheter (7 liters per minute), steam inhalations, aminophylline suppositories 0.5 gm. every 6 hours, and intravenous fluids to correct mild acidosis and dehydration. She was given 600,000 units of penicillin b.i.d. initially and received a total of 7,800,000 units of penicillin over an eight-day course. In addition, she was given 5 ml. of gamma globulin deep intramuscularly in each buttock on the second hospital day. The patient continued in moderate distress for the first 24 hours, at which time she went into active labor. Six hours after onset of labor she was delivered of an estimated 2 lb. 8 oz. boy who was immediately placed in an incubator. Analgesia for delivery was a pudendal block, 1% Novocaine. The patient was in severe respiratory distress following delivery and appeared to be approaching a crisis. A staff conference resulted in a decision to give intravenous cortisone only if the blood pressure began to fall; to withhold tank respirator and tracheostomy until respiratory failure was imminent or she was unable to handle her secretions. The patient remained in a rather precarious balance for 8 hours. The blood pressure remained stable and the respiratory rate gradually diminished from a high of 100 per minute to 40 per minute. The patient made a gradual, uneventful recovery over the next 7 days. She was discharged asymptomatic and afebrile. Serial roentgenograms show a return to normal in six weeks. The premature infant died 3 days following delivery. Autopsy showed incomplete expansion of the lungs with atelectasis. Microscopic examination did not demonstrate intracellular inclusion bodies.

Discussion

Although the basic lesion of varicella, the vesicle and the crusted pustule are supposed to heal completely without scarring in the absence of secondary infection, this is not true in severe cases. The skin lesions healed slowly in one of our cases, (Case 1), but at least one-half of them left punctate depigmented scars, easily visible one year after recovery.

As shown in previously reported cases, the lung may be involved in a miliary spread, with a roentgenogram indistinguishable from that of miliary tuberculosis. The roentgenograms of our two patients show that resolution is slow but is probably nearly complete with minimal scarring by fibrosis. The extensive involvement of the lungs during the acute phase is the most characteristic complication of varicella in the adult. The patient shows rapid, shallow breathing insufficient for oxygen requirements, leading to cyanosis which may be severe. Likewise the hyperventilation with loss of CO_2 causes respiratory alkalosis which is persistent until significant resolution has taken place. The cyanosis persists despite oxygen and aminophylline therapy until the crisis is past and resolution begins.

The cardiovascular system perhaps is affected directly by varicella lesions, and certainly indirectly by hypoxia secondary to pulmonary involvement. Congestive heart failure in a previously normal male was diagnosed clinically by Rosecan[10] and proven by elevated venous pressures which responded to digitalization.

Two other cases were thought to be in congestive heart failure and were digitalized with some improvement in cardiovascular status.[1, 5]

Case I showed a right bundle branch block on ECG at the height of her illness. This right bundle branch block has persisted to date. Unfortunately we do not have an ECG taken prior to her illness. This may well represent a varicella lesion and subsequent scarring of the myocardial conduction tissue. If so, future reports may bear out this speculation as a type of complication with varicella viremia. However, autopsy studies have not as yet demonstrated direct varicella involvement of the myocardium or its conduction tissue.

The keystone of treatment in varicella, with or without complications, is bedrest with adequate sedation, attention to diet and fluid intake. In the event of varicella with visceral complications in the adult, careful bedside observations with individualized treatment is imperative. The constant feature of diffuse viral pneumonia with secondary cyanosis requires moist oxygen and is helped by steam inhalations and vaporizing agents such as sodium lauryl sulfate or Alevaire. The cyano-

sis produces hyperventilation with respiratory alkalosis which is persistent until resolution. Also with cyanosis, further cardiovascular decompensation may ensue which requires supportive therapy. We believe that digitalization is indicated in acute cor pulmonale that does not respond to oxygen therapy, and is mandatory if decompensation progresses to congestive heart failure. Further, if shock should occur or intervene, then steroid therapy, either ACTH or cortisone, is indicated; otherwise, the steroids are of doubtful value. At present there is no antimicrobial specific for systemic viremia.[16] Although tetracycline was reported as being helpful in varicella earlier,[11, 6] recent reports deny this.[9, 10] In our case in which Achromycin (tetracycline) was used at therapeutic levels it did not shorten or ameliorate the natural course of the disease. Aureomycin and other antimicrobials may prevent secondary infection, particularly of the skin lesions.

It is impossible to determine either clinically or by autopsy findings whether cyanosis or direct involvement by intracellular inclusion bodies is a more toxic agent to the viscera. All cases reported had either moderate or severe cyanosis, usually early in the disease. Necropsy specimens have shown intracellular inclusion bodies in the skin, lungs, thymus, brain, kidneys, esophagus, bile ducts, ureters, pancreas, adrenals, and spleen.[5, 7, 13, 14, 15] Visceral involvement as seen in clinical complications are shown in Table 1.

TABLE 1

Complications in 17 Cases of Varicella

No.		*Author*
17	Pneumonia with cyanosis	1 - 12
3	Shock	5, 8, 10
3	Congestive heart failure	1, 5, 10
4	Azotemia	1 (both cases), 5, 8
1	Nephritis	3
2	Encephalitis	1, 5
1	Laryngeal spasm	2
3	Pleurisy	1, 2, 8
1	Orchitis with testicular atrophy	4
4	Death	1, 5, 7, 8

Summary

1. Two cases of varicella in adults with viral pneumonia are presented.
2. Tetracycline did not alter the natural course of varicella.
3. Treatment of varicella in adults remains symptomatic and particular attention should be directed toward correction of cyanosis.

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DIAGNOSIS AND TREATMENT OF CARCINOMA OF THE CERVIX

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Charleston, S. C.

This is a report of the results of treatment of invasive carcinoma of the uterine cervix in patients seen at the Cancer Clinic of the Medical College of South Carolina. Carcinoma of the cervix is second only to carcinoma of the breast as the most common type of genital malignancy in the female, and must be considered as one of the leading causes of death among women. The ratio of cervix to corpus carcinoma is still high in our clinic, twenty to one, as contrasted with the relatively high incidence of corpus carcinoma recently reported by several clinics.[1, 2]

Symptoms: The symptom given most often was abnormal vaginal bleeding. Pain was the next most frequent, but was usually associated with advanced disease. Vaginal discharge, often foul or bloody, was the third prominent symptom. Urinary symptoms were the presenting complaint in a few patients. The duration of symptoms prior to diagnosis or treatment was quite long in some cases, up to two years in fact. Patient delay of at least several months was the usual finding, and in some cases there was a delay of an appreciable duration on the part of the initially consulted physician.

Method of Diagnosis: Diagnosis is made only by biopsy, and no case is treated now unless a definite diagnosis is made pathologically of invasive carcinoma, no matter how obvious the lesion. No case is treated on the basis of exfoliative cytology alone, although cytologic examination is a very valuable method of screening patients who have no visible lesion. In our old records we found one case treated with radium for carcinoma, when granuloma venereum (granuloma inguinale) was the probable correct diagnosis; another patient was treated with radium for intraepithelial carcinoma, and another was treated elsewhere with inadequate irradiation without a biopsy. Benign granulomatous lesions can resemble carcinoma remarkably well.

Age Incidence: The ages of our patients ranged from 19 to 87 years. Carcinoma of the cervix is not limited to the so called "cancer age", although it is most often seen in patients in their forties.

Parity: Multiparity was fairly common among these patients, but we have no comparable control group to use for comparison. We have no way of determining if cervicitis or cervical lacerations were present prior to development of carcinoma.

Clinical Classification: We use the standard League of Nations staging for our cases.[3] The stages are defined as follows: Stage I includes those lesions limited to the cervix, with no demonstrable parametrial or vaginal involvement. Stage II denotes involvement beyond the cervix but not to the pelvic wall, or involvement of the upper two-thirds of the vagina. Stage III cases have extension to the lateral pelvic wall or to the lower one-third of the vagina. Stage IV includes cases with involvement of the bladder or rectum, or metastases beyond the true pelvis. Staging is based on the findings at the time of the initial examination; if there is doubt about the stage, the lesser of the two stages is used. The stage is not changed if further extension is found at later examination or at operation. This staging is of value in planning therapy, in giving the patient or her family a prognosis, and especially in comparing results of therapy.

Material: This report includes all patients treated for carcinoma of the cervix at the Cancer Clinic of the Medical College of South Carolina between July 1, 1948, and June 30, 1954. This gives us two groups of patients, those followed for five years or longer, and those followed for less than five years, but longer than sixteen months. Survival and cure rates are computed as of November 1, 1955. We have included only those patients who received their original therapy through our

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clinic, since a number of patients have been referred after partial therapy, after recurrence, or after development of complications following therapy.

We have included patients who refused treatment, and those who failed to complete treatment. Failure to complete therapy was due to lack of patient cooperation, death while under treatment, or lack of an identifiable cervical canal. Patients lost to follow-up are presumed dead, and are included in our statistics. For purposes of comparing methods of therapy in Stage I cases, we have computed survival rates for the entire group and for only those who had complete treatment.

Methods of Treatment: With the exception of about one-half the patients with Stage I carcinoma, patients were treated with irradiation and radium. The dosage of irradiation varied, but recently it has been fairly well standardized, at 8,000 roentgens externally (measured in air), delivered in divided doses over a period of about one month, with 2,000 roentgens being administered through each of four 6 x 15 cm. portals directed to the pelvis; factors used are 250 kv, half voltage layer 1.2 mm. copper, target skin distance 50 cm. In addition most of the patients received intravaginal irradiation, varying from 500 to 1,500 roentgens. Radium was inserted in such a fashion as to deliver approximately 8,000 roentgens at point A in the pelvis; this was accomplished in most cases by use of the Campbell applicator (Fig. 1) or a T-tube and two colpostats. The distribution of radium usually consisted of 30 or 40 mg. in the cervical canal and uterus, and 30 mg. in each lateral fornix of the vagina. In many cases with advanced lesions the radium was not satisfactorily inserted, and in a few cases the cervical canal would not admit the applicator.

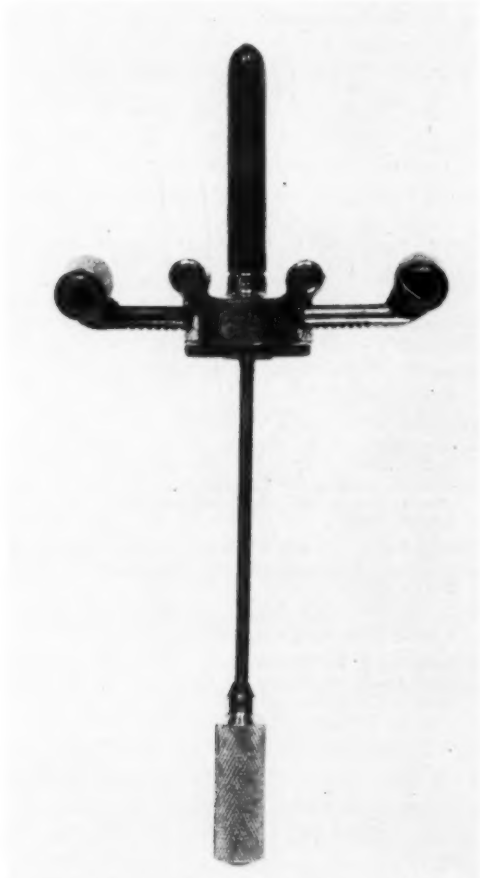

Figure 1.—Campbell applicator for radium, with arms fully extended.

Patients treated surgically had the so-called radical Wertheim operation, consisting of radical hysterectomy, partial vaginectomy, bilateral salpingo-oophorectomy, and pelvic lymphadenectomy. One case was treated by ordinary total hysterectomy because of a preoperative diagnosis of noninvasive carcinoma of the cervix. Since that experience we have done a conization of the cervix prior to hysterectomy for noninvasive carcinoma in order to confirm the diagnosis.

Complications: Our records are incomplete regarding the incidence of certain complications, so figures cannot be given. Those most commonly seen are irradiation proctitis, cystitis, and dermatitis, perforation of the uterus, rectovaginal fistula, vesicovaginal fistula, pyometra, irradiation sickness, stenosis of the vagina, and stenosis of the rectum. The Wertheim operation carries an appreciable incidence of urinary complications.

Results of Treatment: Results are given in the accompanying tables according to stage and time since treatment. Stage I cases are divided further according to method of treat-

ment, completion of treatment, five year survival without demonstrable recurrence, and five year survival with recurrence. Our survival rates compare favorable with those reported elsewhere, but the overall five year survival rate of 34% is not at all encouraging. The only hope of improving the survival rate appreciable lies in detection of cases at an earlier stage.

Not included in these statistics are several patients referred to this clinic after a hysterectomy had been done elsewhere for carcinoma. The five year cure rate in this group is zero.

It is now widely believed that invasive carcinoma is preceded by a noninvasive stage, and that this noninvasive stage may be present for several years prior to actual invasion. This intraepithelial carcinoma may present no symptoms, and its gross appearance seldom suggests malignancy. Only by routine examination of cervices of normal appearance by Papanicolaou smears or biopsy can carcinoma be detected in a completely curable stage. The cure rate in noninvasive carcinoma is practically 100%, and the accepted treatment, hysterectomy, is far simpler than the radical surgery or hazardous irradiation required for invasive carcinoma.

Conclusions: We have presented the results of treatment of invasive carcinoma of the cervix at the Cancer Clinic of the Medical College of South Carolina, and have outlined our plan of therapy. Radium and irradiation are the preferred treatment, except in a few select cases with very early lesions. The five year survival rates are low in advanced cases, and only by earlier detection of cervical cancer can our overall survival rate be improved. The operation of total hysterectomy has no place in the treatment of invasive carcinoma of the cervix.

Table I—Stage I, treated more than 5 years ago.

	Radiation	Surgery	All Cases
Living without recurrence	12	10	22
Living with recurrence	2		2
Dead	8	3	11
Incomplete treatment	(1)		(1)
Total Cases	22	13	35
5 year survival without recurrence	54.5%	76.9%	62.9%
5 year survival	63.7%	76.9%	68.6%
5 year survival after adequate treatment	66.7%	76.9%	70.6%

Table II—Stage I, treated less than 5 years ago, but more than 16 months ago.

	Radiation	Surgery	All Cases
Living	15	10	25
Dead or Lost	9	2	11
Incomplete treatment	(2)		(2)
Total Cases	24	12	36
Surviving	62.5%	83.3%	65.8%
Surviving after adequate treatment	68.2%	83.3%	73.5%

Table III.—Stages II, III, and IV, treated more than 5 years ago.

	Living	Dead	Total Cases	Survival
Stage II	15	36	51	29.4%
Stage III	6	35	41	14.6%
Stage IV	1	9	10	10.0%

Table IV.—Stages II, III, and IV, treated less than 5 years, but more than 16 months ago.

	Living	Dead	Total Cases	Survival
Stage II	22	29	51	43.1%
Stage III	15	45	60	25.0%
Stage IV	0	10	10	0 %

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A NEW TREATMENT FOR SEBORRHEA AND ALLIED SKIN CONDITIONS (FOSTEX)

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Columbia, S. C.

One of the most common dermatoses that we treat today is chronic seborrheic dermatitis of the scalp. This is a condition that requires continuous preventive treatment even after it has been cleared. Sulfur greases containing salicylic acid with resorcin had been used without much success before selenium sulfide was introduced.[1] The sulfur greases were disliked by the more fastidious patient who very often discontinued therapy before the desired results were maintained. Although selenium sulfide was an improvement over previous greasy ointments, it was not wholeheartedly accepted because of its qualities of toxicity. Fear of over-absorption was present. Other objectionable features of selenium sulfide were the presistance of excessive oiliness and the orange tinting of the scalps of grey-haired people.[2] A recent report warns of the possibility of diffuse hair loss[3] because of the use of selenium sulfide.

I have prescribed the use of Fostex cream and cake for seborrheic conditions of the skin and scalp in my office in approximately 120 cases during the past six months. The vast majority of the cases studied have indicated that this preparation is a non-toxic and efficient method of controlling these conditions. The ease of using a shampoo and cake skin cleanser assures the cooperation of the patient.

Fostex cream is massaged into the wet hair and scalp for 3 to 5 minutes and rinsed thoroughly. This procedure is then repeated to complete the shampoo. The shampoo is used every 3 or 4 days at the inception of treatment. The intervals between applications may be prolonged as the oiliness and scaling are reduced. Weekly applications usually suffice after two to four weeks of the initial treatment. The use of Fostex cream should be continued on a periodic basis to prevent recurrence of seborrhea.

The cake is used as a soap substitute to wash the face. Both the cream and the cake consist of subulytic,[4, 5, 6, 7, 8] a combination of anionic soapless cleansers and wetting agents which have a profound anti-seborrheic action. Specifically, the anionic agents consist of sulfoacetate, sulfonate and sulfosuccinate, all of them employed in dermatology for years with a documented record of safety and tested for absence of toxicity, irritant and sensitizing properties. They are mildly antibacterial and keratolytic. Further action is provided by sulphur 2%, salicylic acid 2%, and hexachlorophene 1%.

In acne vulgaris associated with seborrhea, both Fostex cake and cream quickly dried the skin and were particularly helpful in cleansing comedones. They were effective in keeping the skin dry with peeling. On rare occasion the drying became too marked and it was necessary to discontinue this treatment temporarily.

RESULTS OF THERAPEUTIC USE OF FOSTEX CREAM AND CAKE IN SEBORRHEIC DERMATITIS OF SCALP AND FACE OBSERVED OVER A SIX-MONTH PERIOD

Classification	Number Patients	Excellent	Good	Fair	Poor
Seborrheic Dermatitis of Scalp and Face	84	65	14	3	2
Seborrhea Associated with Acne	36	24	7	5	

Summary

In a series of approximately 120 cases, I have observed Fostex to be a most satisfactory preparation for controlling seborrheic dermatitis of the scalp and face. It also proved to be efficaceous as an adjunct in the treatment of acne vulgaris. Because of its lack of toxicity as

well as its simplified application this preparation is to be commended as a valuable addition to dermatological therapeutics.

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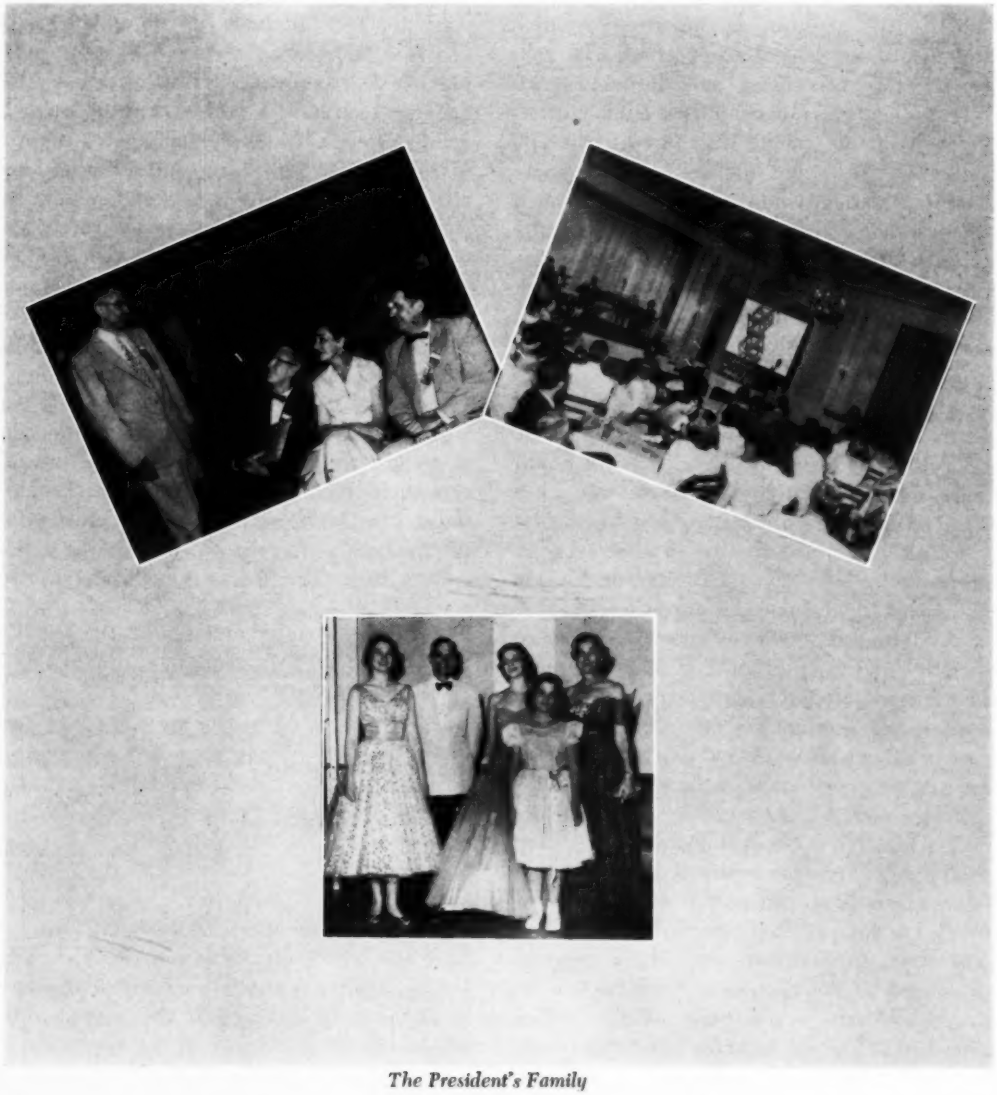
Fostex cream and cake used in this study was supplied by Westwood Pharmaceuticals, Buffalo, N. Y.

Notables *Entertainment*



The President's Family

PRESIDENT'S PAGE

The practice of medicine consists of more than the caring for individual patients. There is an obligation to the profession and the public which must be recognized. Physicians enjoy confidence and are accorded privileges on account of their special calling. They are looked upon as dedicated to public welfare to the exclusion of selfish interests, whether they be in private practice, a research laboratory, or in the service of a medical institution. To discharge their responsibility physicians, in addition to their special field of endeavor, should serve and express themselves through professional organizations which determine broad policies as regards practice and public relations, as well as raising the standard of medical care through education.

In addition to keeping up with the science of medicine the physician should keep abreast of medical thought as regards relations within the profession and with the public so as to promote healthy practice policies in the interest of public welfare. General practitioners constitute 80% of the members of the state association. Due to their close relationship with the public they are in a particularly favorable position to sense its needs and recognize problems in medical care. Their thoughts along these lines should be brought before the State Association by means of a resolution proposed by a county society or by direct communication with one of the standing or special committees. In this way they can be given more general consideration so that appropriate action can be taken, to the mutual benefit of the public and the medical profession.

William H. Prioleau

Editorials

MEETING ACCOMPLISHED

It was a good meeting at Myrtle Beach. All went smoothly, business was transacted peaceably, programs proceeded pleasantly, and entertainment was ample without being overwhelming. Attendance was very good.

The delegates commended the Governor and the General Assembly on their service in the business of the naturopaths. The Bricker Amendment was endorsed and House Bill 7225 on Social Security was condemned. Fluoridation of water was endorsed. Many other matters were discussed and the resolutions and reports will be found in the minutes of the meeting, which will be published soon.

Dr. Lesesne Smith of Spartanburg was named president-elect for next year, and Dr. Richard Johnston of St. George was elected vice-president. There were few changes in other important positions.

Dr. Mayer in his presidential address made a studious analysis of the problem of distribution of doctors of various kinds in the state. His management of the meeting set an example of smoothness and efficiency.

MILITARY VETERINARIES

Since Secretary of Defense Wilson found that the Army and the Air Force had more veterinaries than they had animals, and recommended drastic reduction in the former, there has been a bit of a storm brewing. The AMA is backing the veterinary organization. The latter states that its primary responsibility is inspection of animal food products and that by reason of this function it serves to prevent the outbreaks of food poisoning which have been so disastrous in the military services in the past.

Most medical physicians have high regard for the veterinarian. In fact, more than one may be tempted at times to follow the example of Dr. Doolittle, a medical character well known to juveniles, and to desert the difficulties incidental to the human patient in favor of the less complicated approach to the animals in Africa or some other chosen spot. Yet if the chief function of the army veterinarian is food inspection, why cannot his duty in this line be delegated to someone less highly trained and less expensive? It is doubtful that all our civilian food is veterinary-inspected, and we don't seem to have too many outbreaks of serious food poisoning.

The AMA has asked for more study of the situation. We should all know about it before we let our sympathies loose.

POLIO VACCINE

The giving of Salk vaccine seems to proceed at a lively pace in most parts of our state. A rumor has it that our fairly plentiful supply is the result of hesitancy in use in some other areas. Some patients are still repelled by the recollection of the early disaster with the vaccine, but confidence has mounted very considerably.

The practitioner is still kept in a somewhat dizzy condition by the rapid changes of advice as to giving two doses or three doses, or what the interval should be, or what age group the supply can be expected to cover. With all this, his activity is considerable.

The time has passed when the control of the vaccine should be centralized, and the physician will be happy when polio vaccine is just as much a routine as are the other common injections of childhood. The experience of this season should be enough to determine whether our high expectations are to be sustained or lowered.

A little extra confusion is added by recent reports that two doses or even one dose will give a satisfactory measure of protection, and by other pronouncements as to the duration of protection. For the safe estimate, we can wait to see the practical result rather than the outcome of titrations, and indications are all on the favorable side.

The three dose schedule still seems to be wise, and as for the time for "boosters", who knows? This uncertainty leaves the group of children who first took the vaccine in an undetermined status. Our impulse is to go ahead with three doses and an annual booster until the supply of vaccine fails or further study shows a better way.

GREATEST SHOW ON EARTH

It may be time to take this name from the glittering spectacle of the circus and transfer it to the meetings of the AMA, especially since there is an increasing invitation to the public to view the marvels presented there. Even the "average man" should be as astonished by the transplanting of a kidney as he is by the bearded lady or the pinhead cannibal.

It is a healthy move to invite the public to witness the progress of medicine and the promise for the future. If only exhibits such as appear at our meetings could pursue the peripatetic path of the marvels of the circus, much more good would come to the public and the profession, even if the technique involved the use of some restrained ballyhoo and reasonable digestible refreshments.

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Dr. R. M. Pollitzer ---------- Greenville

COMMITTEE ON MEDICAL AND HOSPITAL INSURANCE CONTRACTS
Dr. J. P. Cain, Chairman ---------- Mullins
Dr. E. D. Guyton ---------- Florence
Dr. R. W. Hanckel ---------- Charleston
Mr. M. L. Meadors, ex-officio ---------- Florence

COMMITTEE ON RURAL HEALTH
Dr. Marshall Bennett, Chairman ---------- Walterboro
Dr. James Sanders ---------- Gaffney
Dr. Wilbert Rogers ---------- Loris

COMMITTEE ON INDIGENT CARE
Dr. Ben Miller, Chairman ---------- Columbia
Dr. Stanley Morse ---------- Beaufort
Dr. W. W. Fennell ---------- Rock Hill

MEDICAL ADVISORY BOARD TO THE CRIPPLED CHILDREN'S SOCIETY OF S. C.
Dr. J. I. Waring, Chairman ---------- Charleston
Dr. Sam Lowe ---------- Rock Hill
Dr. Harry Mims ---------- Charleston
Dr. William Weston, Jr. ---------- Columbia
Dr. E. W. Masters ---------- Columbia
Dr. J. T. Green ---------- Columbia

Dr. C. Guy Castles, Jr. ---------- Columbia
Dr. John Bell ---------- Greenwood
Dr. W. C. Whetsell ---------- Orangeburg
Dr. George D. Johnson ---------- Spartanburg
Dr. T. G. Goldsmith ---------- Greenville
Dr. T. R. Gaines ---------- Anderson
Dr. F. E. Kredel ---------- Charleston
Dr. J. A. Siegling ---------- Charleston
Dr. Julian Price ---------- Florence
Dr. Wm. H. Prioleau, ex-officio ---------- Charleston

ADVISORY COUNCIL TO THE WOMAN'S AUXILIARY

Dr. Owen Ravenel, Chairman ---------- Charleston
Dr. O. B. Mayer ---------- Columbia
Dr. D. L. Smith ---------- Greenville
Dr. Richard Johnston ---------- St. George
Mr. M. L. Meadors, ex-officio ---------- Florence

COMMITTEE ON THE CARE OF THE PATIENT

Dr. E. C. Hood, Chairman ---------- Florence
Dr. D. L. Nance ---------- North
Dr. H. L. Laffitte ---------- Allendale
Dr. R. W. LaRoche ---------- Camden
Dr. W. L. Byerly ---------- Hartsville

COMMITTEE ON CORONERS — MEDICAL EXAMINERS

Dr. J. D. Gilland, Chairman ---------- Conway
Dr. Strother Pope ---------- Columbia
Dr. H. R. Pratt-Thomas ---------- Charleston
Dr. Thomas Parker ---------- Greenville
Dr. Charles Holmes ---------- Columbia

COMMITTEE ON SCHOOL HEALTH

Dr. J. R. Paul, Jr., Chairman ---------- Charleston
Dr. R. C. Brownlee ---------- Greenville
Dr. Murdock Walker ---------- Sumter
Dr. Weston Cook ---------- Columbia
Dr. Riddick Ackerman, Jr. ---------- Walterboro
Dr. Hilla Sheriff ---------- Columbia

COMMITTEE ON MEDICAL EDUCATION FOUNDATION

Dr. R. L. Crawford, Chairman ---------- Lancaster
Dr. H. R. Pratt-Thomas ---------- Charleston
Dr. K. H. Smith ---------- Greenville
Dr. Earl Jones ---------- Florence
Dr. T. F. Stanfield ---------- Anderson

STATE ADVISORY COMMITTEE ON POLIOMYELITIS

Representing the South Carolina Medical Association
Dr. William Weston, Jr. ---------- Columbia

COMMITTEE ON INDUSTRIAL HEALTH (to be appointed later).

COMMITTEE TO MAKE RECOMMENDATIONS regarding practice by graduates of non-recognized medical schools, and foreign physicians here on a temporary basis

Dr. Sam O. Cantey, Chairman ---------- Marion
Dr. Gordon Able ---------- Newberry
Dr. W. P. Beckman ---------- Columbia
Dr. George Dawson ---------- Florence
Dr. Cheves Smythe ---------- Charleston
Dr. James McQuown ---------- Greenwood

MINUTES OF COUNCIL

MYRTLE BEACH, MAY 14, 1956

The first meeting of Council in conjunction with the Annual Meeting of the South Carolina Medical Association was held at the Ocean Forest Hotel at Myrtle Beach, S. C. on May 14, 1956. The meeting was called to order by the Vice-Chairman, Dr. Wyatt at 3:10 p. m. Shortly thereafter the Chairman, Dr. J. P. Cain took charge of the meeting and presided thereafter. All members of Council were present and in addition Mr. Francis Taylor, the newly appointed Public Relations Representative.

The minutes of the Special Meeting of Council of November 16, 1955 were read and approved.

Dr. J. H. Stokes, Treasurer, rendered his annual report which is to be presented to the House of Delegates.

Dr. J. I. Waring, Editor of the Journal, rendered his report which likewise is to be presented to the House of Delegates. Dr. Waring asked the opinion of Council as to whether or not advertisements for hard liquors should be accepted for the Journal and Dr. Gressette moved that Council advise the management of the Journal that advertisements of this type were not acceptable. After a motion to table was lost, the motion was passed by a vote of 10 to 5. The Secretary raised the question as to whether or not advertisements for beer were acceptable but the Chairman ruled this point out of order and directed the Secretary to look in minutes of previous meetings of Council regarding action on such matters.

The Secretary then presented his annual report, which was to be given to the House of Delegates in their regular session.

The Chairman of Council then called for a discussion of the attitude of the South Carolina Medical Association regarding the Social Security Bill, H.R. 7225, now pending in the United States Senate. It was discussed by Drs. Mayer, Guess, Wilson and Wyatt and a motion was passed to recommend to the House of Delegates, resolved: Whereas, the House of Delegates of the South Carolina Medical Association, as individuals and as a group, opposes the passage of the Social Security Bill (H.R. 7225) now under consideration in the United States Senate, in its provisions for reducing the age at which social security benefits for women begin, in allowing benefits for total disability, and in requiring compulsory social security coverage for unwilling professional groups; and

Whereas, there has never been an adequate, objective, unbiased study of the nature, cost and scope of the social security system and its economic, social and political impact on the American people; Now, therefore

BE IT RESOLVED, That the House of Delegates of the South Carolina Medical Association urge upon the Congress of the United States the creation of a well qualified Commission to make a thorough, ob-

jective and impartial study of the economic, social and political impact of social security, both medical and otherwise, and that the facts developed by such a study be the sole basis for an objective, non-political solution to the social security issue; and that

The Secretary be directed to inform the South Carolina members of the United States Senate and House of Representatives of this action, as well as Senator Byrd, Chairman of the Finance Committee; and that

Individual physicians be urged to inform their Congressional Representative of their feeling in this matter.

The President, Dr. O. B. Mayer, then rendered his annual report to Council which was likewise to be presented to the House of Delegates.

The Delegates to the American Medical Association, Drs. Weston and Johnson, reported to Council and Dr. Weston asked for instructions regarding a resolution pending in the AMA in regard to the dispensing of glasses and optical appliances by ophthalmologists. The Chairman ruled that no instructions could be given by Council to Delegates in any matters.

Dr. R. L. Crawford, Chairman of the Committee for the Medical Education Foundation, reported that the quota for physicians in S. C. amounted to approximately $12,000 to $13,000. He said that if each physician contributed $10 this amount could be raised, and noted that some industrial foundations were withdrawing their support because of the lack of interest on the part of members of the medical profession. A letter had been sent to each individual member of the State Association requesting a contribution of 10 dollars for this foundation and a total of approximately $650 to $700 had been raised thus far. After discussion by Drs. Prioleau, Johnson and King it was moved by Dr. Stokes that the matter be referred to the Finance Committee with the addition of the President and the President-Elect, to report to the Council and to the House of Delegates their recommendations in this regard.

Dr. J. H. Stokes reported on the activities of his committee in the matter of the optometrist's bill in the recent session of the General Assembly and the Chairman ruled that this committee should be continued.

Dr. C. N. Wyatt, Chairman of the Committee on Civilian Defense reported in detail on the activities of his committee and made a number of recommendations:

1. That the Association approve legislative action to permit one of the deputy directors of Civilian Defense to be designated as the individual responsible for and in charge of all medical affairs, including physicians, hospitals, nurses, dentists, and pharmacists.

2. That each Councilor designate a specific individual physician in each county to be responsible for organizations for medical disaster relief.

3. That each large center in the state be urged to organize a mobile medical unit, to be available for service where and when needed.

4. That all hospitals be catalogued as to all their facilities available, not only their bed capacity, but their expansion capacity, water supply and all other necessary details, and that this information be made available to all concerned.

The Chairman ruled that the work of this Committee be continued and it was suggested that Dr. Wyatt be sent to the Civilian Defense conference at the meeting of the AMA on June 9th but he said that he would be unable to attend and Dr. Johnson, delegate to the AMA announced that he would be present at this conference.

The Executive Secretary, Mr. M. L. Meadors, rendered his annual report, and noted that the day coincided with the hearing before the Supreme Court in regard to the constitutionality of the Naturopathic Bill.

Dr. Julian Price spoke regarding the high percentage of Honorary Members on the role of the Association. It was noted that the Anderson County Medical Society had approved Dr. George T. Peel for Honorary Membership in the Association and Council confirmed this change in status.

Mr. Meadors asked for authority to renew the contract with the Veterans Administration for outpatient medical care for the next year and a motion to approve this was passed.

Mr. Meadors then read a letter in regard to nonpayment of American Medical Association dues and said that a letter would be sent to all members in arrears by June 1st. This was received as information.

The Chairman then brought up the question of the Chiropody Bill which had been introduced in the recent session of the Legislature and after some discussion it was moved to refer this to the Committee on Legislation with the request that they report at the fall meeting of Council their recommendations as to the policy of the South Carolina Medical Association in this regard.

The Secretary read a letter from Dr. W. P. Beckman, Chairman of the Commission on Mental Health, in regard to the proposed program for better liaison between the hospital, patients, and their families and recommending certain specific actions to improve these conditions. Dr. Hall, Superintendent of the State Hospital, and Dr. Beckman were present during this part of the meeting and spoke in regard to this proposal. Dr. Bachman Smith moved its approval, and recommended that the matter be referred to the House of Delegates for action; a motion to this effect was passed.

Dr. Bachman Smith questioned as to whether or not the Newsletter should be incorporated with the Journal and this matter was referred to the Editor and the Committee on Publications.

Dr. J. D. Guess, President of the Blue Shield Cor-

poration, gave his annual report and noted a number of changes in the By-Laws which would be presented to the Annual Meeting of the Corporation. Dr. Guess also commented on certain changes in policies which would be suggested in order to obtain some national accounts, and made a number of suggestions for nominations to the Board of Directors of the Blue Shield Plan. These were as follows:

To succeed themselves and serve until 1959,

Dr. Wyman King of Batesburg
Dr. John A. Siegling of Charleston
Dr. J. D. Guess of Greenville
Mr. M. L. Meadors of Florence
Mr. Wilton May of Greenville

In the event that the Corporation approves the changes enlarging the Board, the following nominations were suggested.

To serve until 1959.

Mr. Frank S. Adams, DuPont Company

To serve until 1958.

Dr. Charles F. Lemmon, Jr., Columbia

To serve until 1957.

Mr. J. M. Ocland, Darlington.

Council then gave its approval for these nominations.

The report of the Mediation Committee, Dr. Roderick MacDonald, Chairman, was read and received as information.

The Secretary reported that the South Carolina Society of Obstetrics and Gynecology had nominated Dr. Lawrence L. Hester, Jr. as Chairman of the Maternal Welfare Committee for the next year. A request from Dr. Hester for an appropriation for secretarial work was received and referred to the Finance Committee for consideration for inclusion in the budget for next year.

The Secretary read a letter in regard to the plight of the Library of the Armed Forces, formerly the Surgeon-General's Library, requesting action by the Association for help in securing the passage of a bill now pending in Congress. Council approved this and referred the matter to the House of Delegates for final action.

A letter from Dr. Dickson was read, noting the action of the Abbeville County Medical Society in regard to some commercial industrial insurance policies and selling claims by agents. At the request of the Chairman this matter was referred to the Committee on Insurance for consideration and later report.

A letter from Dr. G. S. T. Peeples, State Health Officer, was read in regard to a proposed act for the control and treatment of narcotic addicts. This was approved by Council and referred to the House of Delegates for further consideration and action.

A letter from the Albemarle County Medical Society of Virginia was read including resolutions in regard to safety measures in driving and proposed legislation in regard to driving under the influence of intoxicating liquors. This was approved on motion of Dr. Weston and the matter referred to the House of Delegates for consideration and action.

The Secretary was directed to prepare a resolution for presentation to the House of Delegates commending the Governor and the General Assembly for their action in the passage of the bill outlawing the practice of naturopathy. The following resolution was then adopted.

BE IT RESOLVED, that, on behalf of the public and in the interest of their better health, the House of Delegates of the South Carolina Medical Association commends to Governor and the members of the General Assembly for their timely action in adopting the laws outlawing the practice of Naturopathy in the State of South Carolina; and that

The Secretary of the Association be directed to inform the Governor and the members of the General Assembly of this action.

The Secretary again presented to the Council the matter of participation and support of the Science Fairs, held in various parts of the state. Council gave its approval to this and referred the matter to the Finance Committee for possible inclusion in next year's budget.

It was announced that the President of the Alumni Association would officiate and open the Annual Banquet and then turn it over to the President of the South Carolina Medical Association.

There was no further business to be considered at this time and the meeting adjourned at 7:10 p. m.

Respectfully submitted,
Robert Wilson, M. D., Secretary

MINUTES OF COUNCIL
MYRTLE BEACH, MAY 15, 1956

Council reconvened at 9:00 a. m. Tuesday morning, May 15, 1956. The meeting was called to order by the Chairman, Dr. Cain. Members present were Drs. D. L. Smith, B. Smith, Mayer, Guess, Stokes, Prioleau, Wyatt, Johnson, Wilson, Morgan, Crawford, Burnside, Gressette, Bozard, Gaines, Waring, King and Weston.

Dr. Cain outlined the various matters to be included in his report to the House of Delegates.

Council then made the following nominations to be presented to the House of Delegates. For Treasurer, Dr. J. H. Stokes.

Mediation Committee:

Third District—Drs. R. B. Scurry and Martin Teague.
Sixth District—Drs. Walter Mead and Sam Cantey.
Ninth District—Drs. J. H. Sanders and Harold Hope.

There was no further business at this time and Council recessed at 9:30 a. m.

MINUTES OF COUNCIL
MYRTLE BEACH, MAY 16, 1956

Council reconvened on Wednesday morning, May 16, 1956 at 8:30 a. m. The meeting was called to order by the Chairman, Dr. J. P. Cain. Members present included Drs. Morgan, Bozard, Guess, Wyatt, King, Burnside, Waring, Weston, Gaines, B. Smith, D. L. Smith, Wilson, Crawford, Gressette and Mr. M. L. Meadors.

DR. A. R. JOHNSTON
NEWLY ELECTED VICE-PRESIDENT

A. R. Johnston, M. D., was born January 19, 1914. He graduated from St. George High School (1929), from Wofford College (1932), and from the Medical College of Virginia (1936). He interned at Sheltering Arms Hospital, Richmond, Va., 1936-1937, and has been in general practice in St. George, S. C. since 1937.

He is a member of The Dorchester County Medical Society, The Coastal Medical Society, The First District Medical Society, The South Carolina Medical Association, The South Carolina Chapter of The Academy of General Practice, The Association of Surgeons of the Southern Railway, and The American Medical Association.

From 1937 to 1949 he was secretary of The Coastal Medical Society and president of that society from 1950-1951. He became president of the First District Medical Society in 1952. He has been a member of The State Board of Medical Examiners since 1945, Delegate from Dorchester County Medical Society to the S. C. Medical Association since 1942, local surgeon for The Southern Railway System since 1947. He was also third vice-president of The Association of Surgeons of The Southern Railway System in 1953.

Dr. Johnston was chairman of the Board of Stewards of St. George Methodist Church 1955-1956 and a member of the Board since 1937. He was chairman of The Upper Dorchester County Red Cross Chapter 1950-1954, president of The Dorchester County Tuberculosis Association 1947-1951. In addition he has been Examining Physician and Medical Advisor for The Dorchester County Selective Service Local Board No. 1 since 1941, secretary of The Board of Trustees of St. George School District No. 1 1953-1954, president of The St. George P. T. A. 1951-1953 (two years) and president of the Business Men's Club 1946-1947.

NEWS

Dr. M. S. Moore of Charleston wishes to state that he has not retired as was announced in the latest directory.

The April 1956 meeting of the Coastal Medical Society was held at Beaufort, S. C. The paper was by Dr. J. C. Metts of Savannah: "The Management of the Cured Coronary Patient."

Dr. R. W. Hanckel, Jr. has been elected president of the Charleston County Wildlife Federation.

Dr. L. Charles Bailes was retained as county physician by the Greenville County Board of Commissioners in regular session on May 1.

Dr. Bailes will be paid a set fee for each call, instead of the usual salary for the county physician.

Dr. George T. Peel, who was serving as county physician, has been ill for some time.

Dr. H. Grady Callison, Anderson County Health Officer, has been appointed to the Council on Public Health and Education, an important division of the American College of Preventive Medicine.

At a meeting of the Industrial Medical Society of South Carolina held at the Ocean Forest Hotel on May 17, 1956, the following officers were elected: J. L. Hughes, Greer, president-elect; J. T. Assey, Georgetown, vice-president; C. B. Hanna, Spartanburg, secretary; and F. H. Stelling, Greenville, treasurer. Dr. Frank Owens of Columbia took over as president, from Dr. I. Grier Linton of Charleston, retiring president.

Inquiries by new members should be submitted to the secretary.

Dr. R. W. Mance, physician, retiring member of the Columbia Planning Commission, was honored by

Mayor J. Clarence Dreher, Jr., who presented a certificate of service at the April 18 meeting of City Council in the City Hall.

Dr. John M. Shingler, who was associated in the practice of medicine in McCormick with Dr. C. H. Workman; has left for Fort Sam Houston, Texas to report for active duty with the Army.

Dr. Shingler first came to McCormick last summer after graduating from medical school. He is the son of the Rev. John M. Shingler, superintendent of the Greenwood Methodist District.

Dr. Cyrus W. Anderson of Denver, Colorado, was chosen 1957-58 president-elect of the Association of American Physicians and Surgeons.

Approximately 225 doctors from 40 states attended the group's 13th annual meeting in Columbus, Ohio, April 5-7.

A new member of the board of directors was Dr. Thomas G. Goldsmith, Greenville, S. C.

Harleyville, which for years had no resident doctor, has one now, Dr. L. F. Behling.

Dr. Behling has set up his office in the Harleyville Pharmacy.

Dr. Behling attended the University of South Carolina and graduated from the Medical College in Charleston. He interned at Roper Hospital, Charleston, and served as resident physician there for two years.

For the first time, a Negro doctor has been admitted to practice in Oconee Memorial hospital.

Dr. Charles Battle was elected to membership on the Medical staff in May, according to Hospital Administrator Milton Snipes.

Dr. Battle's appointment was recommended by the staff and approved by the Hospital board. He has been in general practice in Seneca for two years.

STATE BOARD OF HEALTH

May 30, 1956

POLIOMYELITIS VACCINATION COMMENTS

Age Priority: The age priority groups to receive polio vaccine purchased with public funds in South Carolina has been revised to include all individuals 0-19 years, inclusive, and pregnant women of any age. It must be pointed out however that no one is eligible to receive vaccine purchased with public funds who has reached 20 years of age or above unless she is pregnant. The appropriation act providing public funds for purchase of vaccine limited these funds to individuals under 20 years of age and pregnant women. Supplies of vaccine are being released through commercial channels for all those of any age not eligible to receive public vaccine.

Summer Vaccinations: The U. S. Public Health Service, with the advice of its National Advisory Committee, recommends that vaccinations be continued through the summer, "even during periods of rising incidence of poliomyelitis to assure maximum protection. Evidence accumulated during 1955 supports this conclusion." It will, therefore, be the policy in South Carolina to continue the vaccinations through the summer. Emphasis should be placed on giving first and second doses to as many children who have not received any vaccine until a high percentage of these children have been inoculated.

Dosage: The recommended dosage continues to be two inoculations of 1cc each, intramuscularly, 2 to 6 weeks apart, and a third or booster dose not earlier than 7 months after the second dose. The booster dose will still give good results when given 10 to 12 months, or possibly longer, after the second dose. If the supply of vaccine is available, third doses may be given to children whose parents voluntarily bring them to the office. Active campaigns should be limited to getting two doses into those children in the susceptible age groups until a high percentage of these groups have received at least two doses.

Testing of Vaccine: The Public Health Service is continuing to test all lots of vaccine produced in accordance with the revised standards of testing.

Vaccine Supply: The production of polio vaccine has been increased within recent months and it may be anticipated that more frequent releases will be made during the remainder of this year. This will make it possible for physicians and Health Departments to administer the vaccine without reserving second doses for their patients.

G. E. McDaniel, M. D., Director
Division of Disease Control
State Board of Health

Solitary Non-parasitic Cysts of Liver—George V. Rosenberg (Abbeville)—Am. J. Surg. 91:441-444, March 1956.

Only about 250 of these cysts have been reported. They are usually located near the gall bladder and vary in size from small, to one which contained 17 liters of fluid. Reported here are two cysts, one small, in a young woman, the other the size of a basket ball, in an old woman. The smaller cyst was treated by marsupialization and instillation of formalin, and recurred in two years. It was subsequently treated by radical excision. Treatment failure was due to the multilocular nature of the cyst, which is characteristic. Due to this, in good risk young patients radical resection is necessary to effect cure. Marsupialization plus formalin is still considered satisfactory for poor risk patients.

A RESEARCH MILESTONE

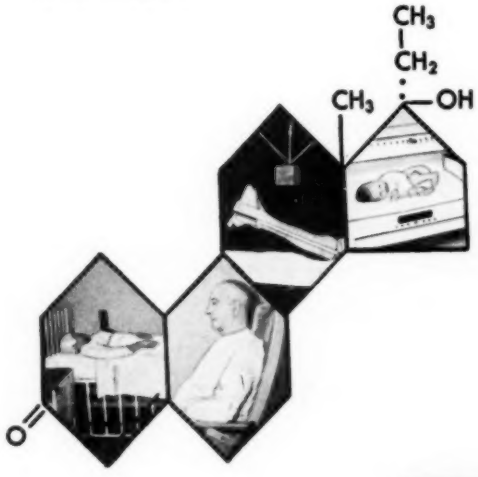
Nilevar*

(BRAND OF NORETHANDROLONE)

Searle's New and Practical Steroid Specifically for Protein Anabolism–

It has long been recognized that a substance which would promote protein anabolism would be of inestimable value in therapy. The androgens have this property, but unfortunately they also exert actions on secondary sex characteristics. These effects are commonly undesirable in therapeutic programs.

THE FIRST STEROID WITH ANABOLIC SPECIFICITY— Nilevar, the newest Searle Research development, therefore, meets a long desired clinical need because Nilevar presents the first steroid primarily anabolic for protein synthesis. Moreover, Nilevar is without prominent androgenic effects (only about one-sixteenth of that exerted by the androgens).



OBJECTIVE AND SUBJECTIVE RESPONSE – Orally effective, Nilevar therapy is characterized by retention of nitrogen, potassium, phosphorus and other electrolytes in ratios indicative of protein anabolism. Moreover, subjectively the patient observes an increase in appetite and sense of well-being.

WELL TOLERATED—Nilevar has an extremely low toxicity. Laboratory animals fail to show toxic effects after six months of continuous administration of high dosages. Nilevar should not be administered to patients with prostatic carcinoma. Nausea or edema may be encountered infrequently. Slight androgenicity may be evidenced on high dosage or in particularly responsive individuals.

MAJOR INDICATIONS—Preparation for and recovery from surgery; supportive treatment of serious illnesses (pneumonia, poliomyelitis, carcinomatosis, tuberculosis); recovery from severe trauma and burns; decubitus ulcers; care of premature infants.

DOSAGE—The daily *adult* dose is three to five Nilevar tablets (30 to 50 mg.) but up to 100 mg. may be administered. For *children* the average daily dose is 1 to 1.5 mg. per kilogram of body weight; individual dosages depend on need and response to therapy.

SUPPLY—Nilevar is available in uncoated, unscored tablets of 10 mg. G. D. Searle & Co., Research in the Service of Medicine.

*Trademark of G. D. Searle & Co.

SEARLE

BLUE CROSS . . . BLUE SHIELD

Do not allow yourself to believe that socialized medicine is a dead duck. It is very much a living issue.

Representative John D. Dingle, Jr. (D. Mich.), son of the man whose name became a by-word with doctors because it was attached to the perennial Murray-Wagener-Dingle bill, has introduced a bill in Congress which if passed will provide free hospital care for persons over 65 who are receiving old-age benefits. Since Social Security has covered or will cover almost everyone, whether employed or self-employed, Mr. Dingle's intent is to offer free hospital care to most people of 65 and over. He has stated, "The wise humanitarian features of this bill are such as to commend themselves to all but the most callous." He feels that the plan will attract interest and support at a time when so much attention is being centered on health and welfare of the aging population. He has said that he has not introduced a compulsory health insurance bill only because the time is not right.

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In connection with Mr. Dingle's bill and in considering health insurance for an aging population, the following figures are interesting: Nearly sixty per cent of American men aged 65-69 are still in the labor force, and forty per cent of those in the 70-75 bracket are still in the labor force. The number of people 65 and over has quadrupled since 1900, while the total population has only doubled. Nearly three fourths of our people over 65 have either no income of their own or have an income of less than $1000.00.

Elderly men still in the labor force are covered by Social Security and will start receiving benefits for themselves and their wives whenever they elect or are forced to retire. However, these benefits are so small that they will provide little for medical and hospital care.

It is a certainty that medical and hospital care will be provided. It may be from general taxation funds. It may be through taxes collected under the guise of contributions to the Social Security system. For those who have Blue Cross and Blue Shield a way must be found to make it possible to continue their membership after retirement and to provide the increased costs incident to their age—more frequent illness, longer hospital stays, and higher incidence of expensive surgery. To meet the problem, there will have to be a sharing of the costs by younger members of Blue Cross and Blue Shield by way of higher membership dues. Such higher dues will make our competitive situation in relation to commercial companies (whose coverage automatically stops at 60 or 65 years of age) very bad.

There is a rapidly expanding market for contracts, supplemental to those providing basic protection, which will provide coverage of major medical expense or extended benefits for catastrophic illnesses. A Blue Shield Commission special committee on extended benefits has reported: "We believe that it is essential that Blue Cross and Blue Shield not only reach an agreement on the pattern to be followed, but that every effort should be made without further delay to make such coverage available. Only by developing a unique and distinctive Blue Cross and Blue Shield approach to this problem can we hope to be effective in counteracting the increasing commercial insurance promotion of so-called 'major medical' programs. We cannot continue to oppose these programs unless we have a sound and adequate alternative. . . . Extension of Blue Cross and Blue Shield coverage into this area of prolonged and catastrophic illness is a natural and logical development, but time is of the essence. . . . Further delay will only invite greater inroads into an area of prepaid medical and hospital care which logically belongs to and which should be developed by Blue Cross and Blue Shield."

The Government administration is advocating an extended benefit plan of health insurance for Federal employees. All Federal workers covered under the Government's group life insurance program would be eligible — some two million persons. Their dependents would be protected also. The Government would pay the entire premium costs. Workers would be encouraged to take out basic health insurance at their own expense. Because of their inability to offer a uniform national contract, this being due to the multiplicity of plans with various experiences and differing principles of operation, Blue Cross and Blue Shield are not in position to bid for this business.

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We face similar difficulties in attempting to bid for the business of large corporations and labor unions which wish a national contract with uniform coverage. Right now the railroad brotherhoods are in the market for such a contract. The union wishes a full pay service contract, with a high income level, with outpatient medical and surgical care, obstetrical delivery service, anesthesia benefits, and diagnostic and therapeutic x-ray benefits. Can the 78 Blue Shield plans unite to provide and to service such a contract? An opportunity is offered to demonstrate specifically the ability of Blue Shield — by cooperative action of plans — to write a program for national accounts. It is an issue that must be faced without further delay. Either we want national accounts and are prepared to make adjustments in order to secure them, or we do not want them. Although the administrative officers of the several plans must assume the leadership in making such adjustments, it is ultimately for the medical profession to say that they will offer full cooperation in servicing the contracts if they are written, for these contracts will have to provide full pay or service benefits. Cash indemnity benefit contracts cannot successfully compete with commercial offerings.

J. Decherd Guess, M. D., Medical Director